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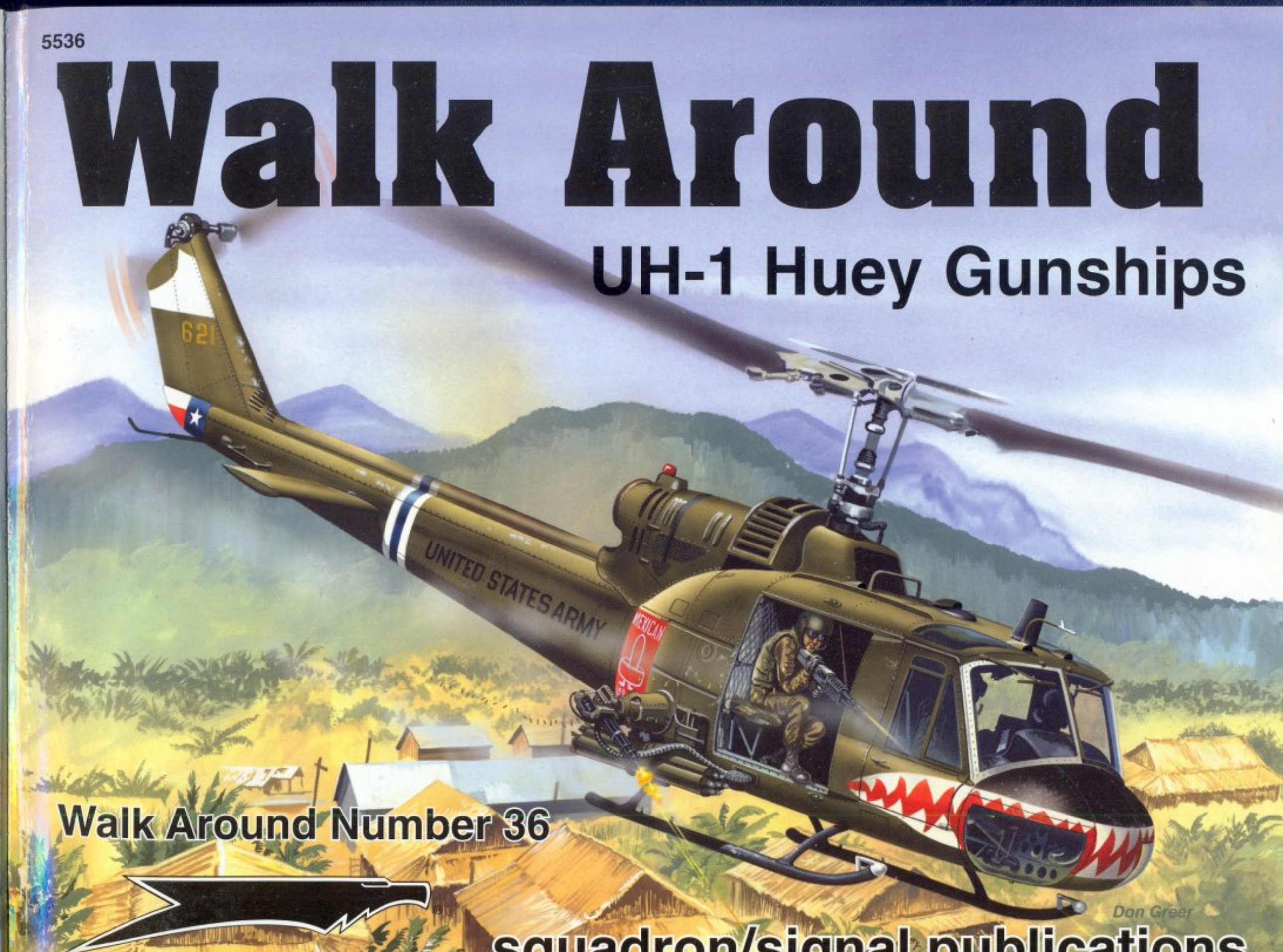
Walk Around

UH-1 Huey Gunships



Walk Around Number 36

Don Greer

squadron/signal publications

Walk Around

UH-1 Huey Gunships

By Wayne Mutza

Color by Don Greer and David Gebhardt

Illustrated by Darren Glenn

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Introduction

Gunships were a natural outgrowth of Bell Helicopter's famed **UH-1** (originally **HU-1**) **Iroquois**, affectionately known to its crews as the Huey. The concept of armed helicopters was not new before the Huey arrived in the late 1950s; however, early helicopters performed poorly when tested as gun platforms. These aircraft lacked the performance – particularly in engine power – to be effective in an armed combat role.

Firm in their belief that armed helicopters were a viable concept, a core of US Army aviation experts rewrote the airmobility doctrine to include using these helicopters. Since the development of aerial machine gun kits coincided with the birth of the Huey, a four-gun kit was tested on the Bell **YH-40** pre-production aircraft. Its success led to the mating of French SS.10 anti-tank missiles with early model Hueys.

Army helicopters assumed a more aggressive role as the Vietnam War began in earnest in the early 1960s. These aircraft were first armed with rudimentary .30 caliber (7.62MM) M37 machine guns and 2.75-inch (70MM) rocket launchers. Hueys were later armed with improved rocket launchers, 7.62MM M60 machine guns, six-barrel 7.62MM M134 Miniguns, and 40MM grenade launchers. The lengthy Vietnam War became the ultimate proving ground for countless weapon systems that were mated with Hueys. Those systems not only made the utility helicopter a fearsome machine, but they also helped forge the airmobile concept. This meant that aircraft were integral with ground forces for intelligence gathering, close air support, and infantry transport – all controlled by the ground forces commander.

Although Huey gunships are usually associated with US Army aviation, UH-1 variants also saw combat with the US Navy, US Marine Corps, and US Air Force. Augmenting the scores of Army Huey gunships in Vietnam were armed **UH-1B**s and **UH-1C**s flown by the Navy's Helicopter Attack Squadron (Light) Three 'Seawolves.' The US Air Force exploited the Huey's success as a gunship by arming its 20th Special Operations Squadron 'Green Hornets' **UH-1F**s, and later its **UH-1N**s, to protect Special Forces teams inserted deep in enemy territory. The Marine Corps likewise added muscle to its **UH-1E**s, and later to its modern twin-engine UH-1Ns. Undoubtedly, the Corps' new **UH-1Y** – a rebuilt UH-1N due to enter service in 2008 – will carry on the role of armed helicopter support. This work presents those US Huey gunships.

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(Front Cover) MEXICAN EXPRESS was a UH-1C Iroquois (66-0621) assigned to the 'Sharks,' the Gun Platoon of the 174th Assault Helicopter Company (AHC) at Ninh Hoa, South Vietnam in 1970. Shark mouths were painted on the Company's Hueys with permission from the World War Two-era 23rd Fighter Group ('Flying Tigers') in 1966.

(Previous Page) This HU-1B (60-3606) from the first production run is painted in the original glossy Olive Drab (OD, FS14087) overall finish, with high visibility markings. Counterbalance weights were positioned above the HU-1B's main rotor. Rearview mirrors mounted on the lower nose 'chin bubbles' were seldom used operationally. (Bell)

(Rear Cover) This UH-1C (189/66-15213) rests at Camp Holloway, Pleiku in Vietnam's Central Highlands in 1968. It flew with the 'Avengers,' the Gun Platoon of the 189th AHC. The Huey is armed with the XM-21 system, which became standard for these helicopters after 1966. Crew chiefs and gunners manned 7.62MM M60 machine guns in the cabin doorways.

One of six Bell YH-40 service test aircraft makes a test flight in the late 1950s. The YH-40s followed the three XH-40 prototypes, the first of which made its initial flight from Hurst, Texas on 22 October 1956. These aircraft introduced the recognizable Huey profile that was continued through successive models. Employing a turbine engine helped Bell meet the Army's 1953 requirements for a new utility helicopter. This aircraft was painted overall Aluminum (FS17178). (Bell)

The HU-1A (redesignated UH-1A on 18 September 1962) was the first production Huey model. It was powered by a 960 shaft horsepower (SHP) Lycoming T53-L-5 engine, which gave it a maximum speed of 120 knots (138 MPH/222 KMH). This HU-1A (58-2066) has the original markings and pilot seats; however, the tail rotor was replaced with one from another Iroquois. (Stephen H. Miller)

The HU-1A led to the HU-1B (later UH-1B), whose many improvements included armament provisions. Shortly after the B's first flight on 27 April 1960, the US Army awarded Bell a contract for the HU-1D (later UH-1D), which was designed for the troop transport role. The third of seven YUH-1Ds (60-6030, left) faces an HU-1B (60-3618) from the first production batch. (Bell)

The US Army tested armament on its new Huey beginning in 1960. This HU-1A (58-2085) tested the nose-mounted 40MM XM-5 grenade launcher at the Springfield Armory, Massachusetts in August of 1962. Fifteen HU-1As – each armed with .30 caliber (7.62MM) Browning M37 machine guns and 16 rockets – formed the Utility Tactical Transport Helicopter Company (UTTHCO) at Okinawa in 1960. Two years later, UTTHCO was deployed to Vietnam. (US Army)

The YH-40's basic airframe configuration was retained by the short-fuselage Huey variants. Large cowlings provided ample access to the powerplant and transmission, while decks eased engine maintenance. The large transmission cowling opened outward and forward. Fire sensing elements lined the engine cowling. Interior surfaces of engine doors and compartments were painted Interior Green (FS24151). Hydraulic ground handling wheels were attached to the skids. (Bell)

The UH-1B comprised the largest number of Huey gunships flown during the Vietnam War. This aircraft was assigned to the 'Razorbacks,' the Gun Platoon of the 120th Assault Helicopter Company (AHC) at Bien Hoa, South Vietnam during the mid-1960s. The Huey is painted overall flat OD (FS34087). It is armed with a nose-mounted 40MM grenade launcher, podded 2.75 inch (70MM) rockets, and two crew-operated 7.62MM M60 machine guns. A white mortarboard is painted on the black nose anti-glare panel. (Terry Love)

This early UH-1B was assigned to the US Army Transportation School at Fort Eustis, Virginia in 1966. The School's insignia – a yellow winged wheel and torch on a red diamond – is painted on the main cabin door. The UH-1B's cabin could accommodate eight troops or three litters; however, employment of the long-fuselage UH-1D for the transport and medical evacuation (medevac) roles freed the B model for the gunship role. A portion of the 'Long Line' High Frequency (HF) radio antenna is mounted on the tail boom. (Terry Love)

The nose-mounted pitot tube and twin Frequency Modulation (FM) homing antennas distinguished UH-1Bs from later Hueys. The FM antennas employed wires that were mounted on cylindrical fairings. This 'Bravo' model of the 117th AHC in Vietnam is armed with eight-tube 2.75-inch rocket launchers. (US Army)

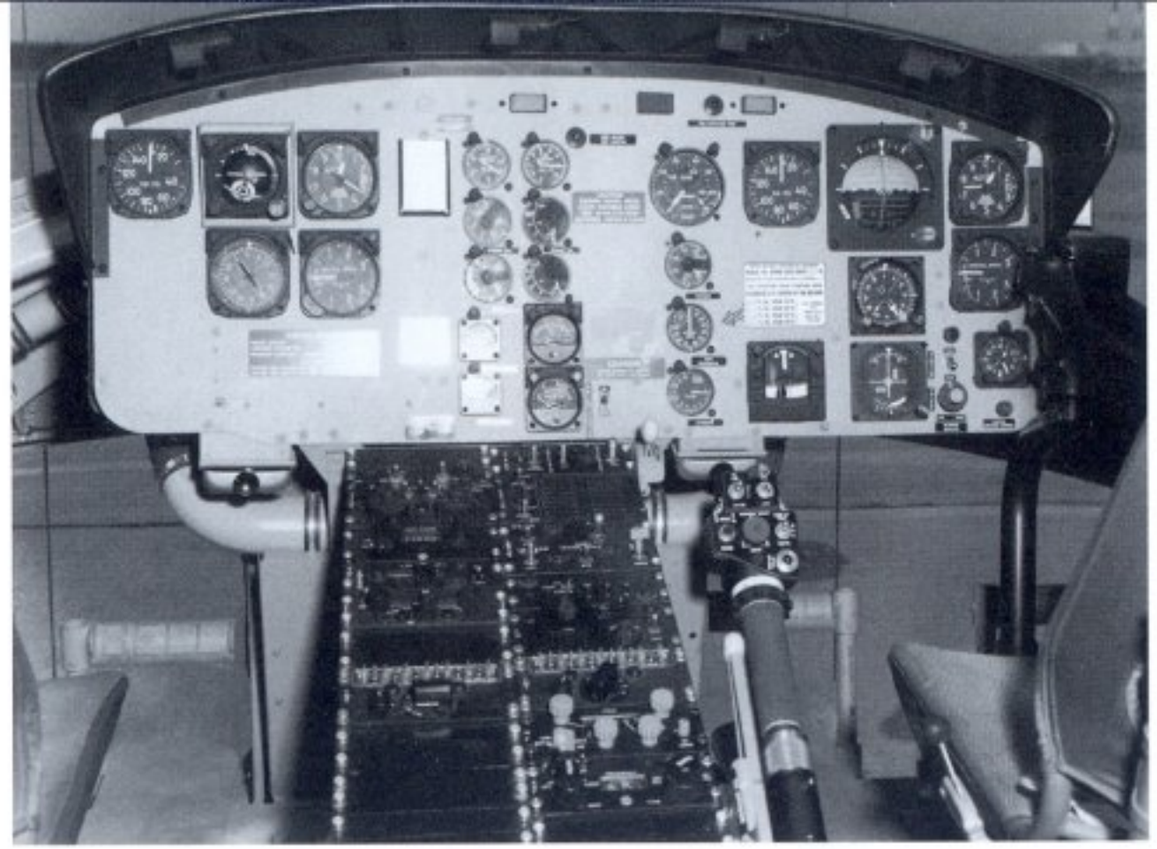
Since the gunship's configuration reduced the UH-1B's performance, Bell designed the UH-1C as a pure Huey gunship, pending the arrival of the Bell AH-1G Cobra. The 'Charlie' model featured a more powerful 1100 SHP T-53-L-9 or L-11 engine and the 540 rotor hub with 27-inch (68.6 CM) chord (width) rotor blades. The vertical stabilizer was cambered and the synchronized elevators were enlarged and reshaped to offset the new rotor's torque. The pitot tube and FM antennas were relocated from the nose to the cabin roof. MISS MINI was an UH-1C assigned to the 'Bandits,' the Gun Platoon of the 118th AHC at Bien Hoa, South Vietnam. (Frank Zardecki)

A nose-mounted pitot tube and an earlier rotor hub with 21-inch (53.3 CM) chord blades identify this 'gate guard' aircraft as a UH-1B. A Bell-developed rotor stabilizing bar mounted atop the main rotor acted as a gyroscopic reference when the Huey returned to normal flight. This item was mounted on the second XH-40 prototype and was standard on all subsequent two-bladed main rotor UH-1s. A large rectangular nose panel provided access to avionics gear. The 9 above and the 1 below the crossed sabres on the nose indicated the 1st Squadron, 9th Cavalry Regiment. (Lennart Lundh)

The Huey's cockpit layout remained standard throughout all UH-1 models. A radio console divided the seats for the pilot (right) and co-pilot/gunner (left). Both positions have a collective pitch stick for main rotor pitch control on the left and a cyclic control stick for horizontal direction control centered in front of the seat. Each collective stick has a throttle that rotates for engine power control. Non-armored seats were covered with Rust (FS22203) colored nylon fabric. (Lennart Lundh)

(Above) Early combat experience in Vietnam led to the installation of armored pilot seats on UH-1s. These seats had fixed wrap-around panels mounted to the seat back and forward-sliding outer panels near the cockpit doors. Two shoulder belts connected with the lap belts in securing the pilot to his seat. (Chris Miller)

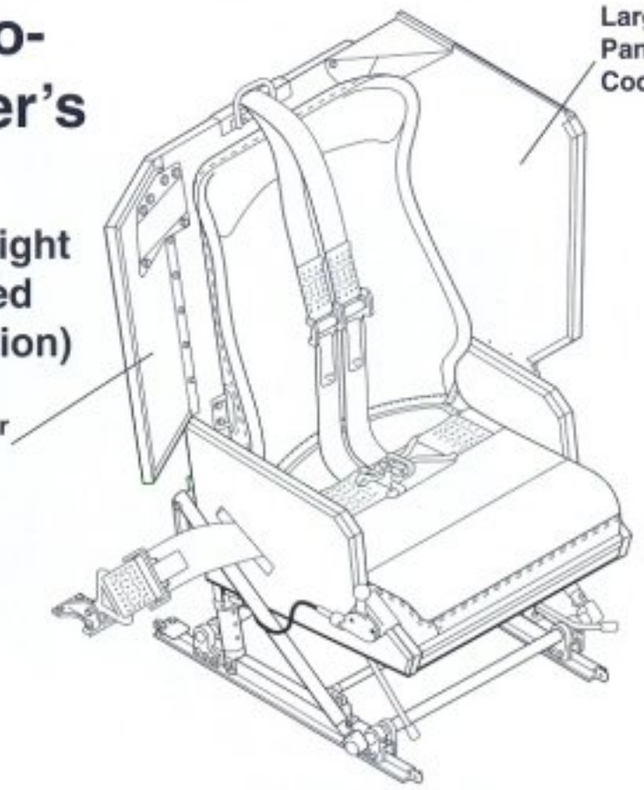
(Right) The white lettering WARNING TO TILT SEAT BACK PULL RED HANDLES is painted on the back of this UH-1B's armored pilot's seat. This referred to handles mounted on each side of the seat. Releasing these handles allowed the seat to be tilted fully back into the cabin, where crew members could remove a wounded pilot. (Lennart Lundh)

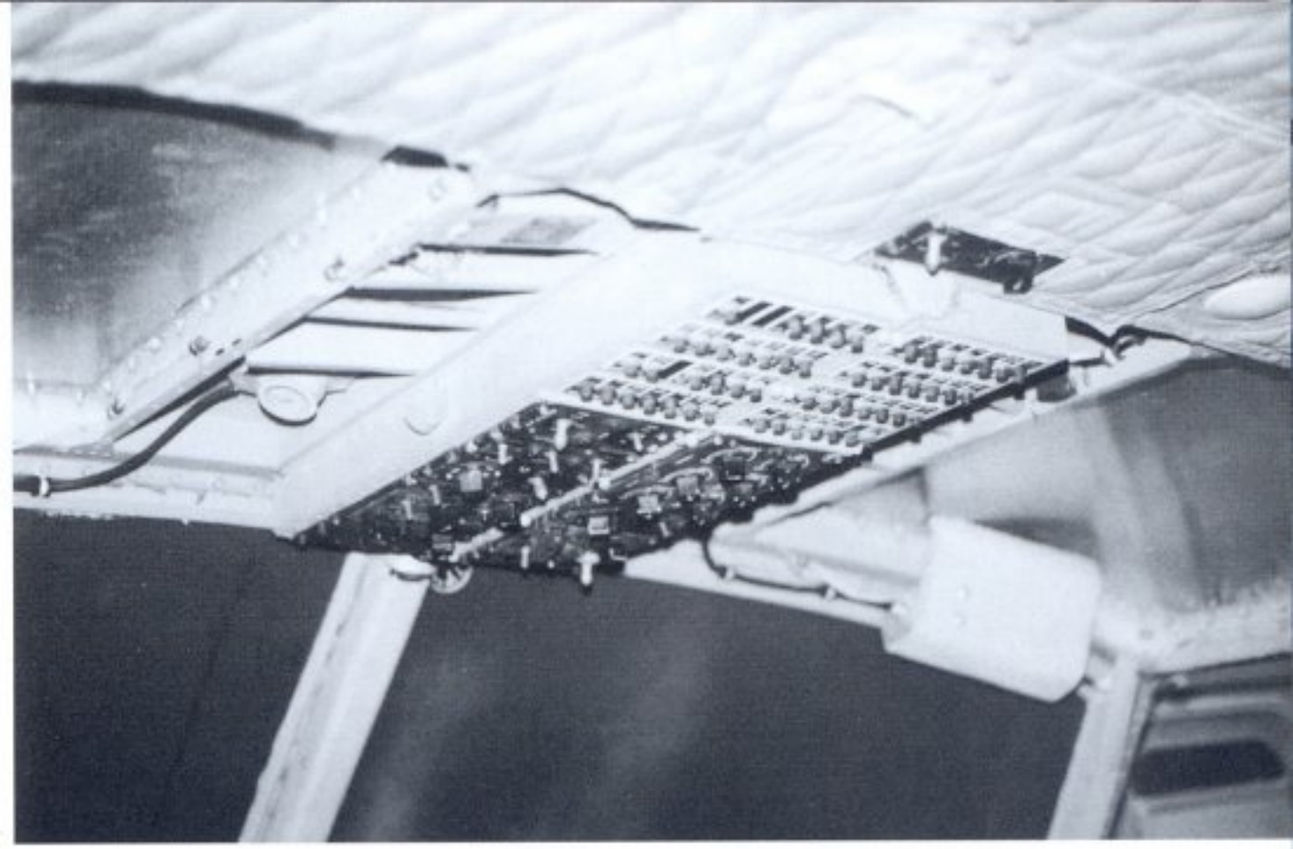


Most Huey cockpits – including this UH-1B (66-15358) – were Dark Gull Gray (FS36231), with Instrument Black (FS27038) console panels and instrument shroud. Many instruments on the Dark Gull Gray instrument panel face the pilot's seat to the right. Three rectangular caution lights and a circular fire detector test light are located immediately under the instrument shroud. The pilot's collective lever is placed beside the center radio console. Engine and searchlight controls are mounted at the lever's end, with the throttle immediately below these controls. Directional control pedals on the floor adjust the tail rotor's pitch. (Bell)

Armored Co-Pilot/Gunner's Seat

(Pilot's Seat to Right Reverses Armored Panel Configuration)



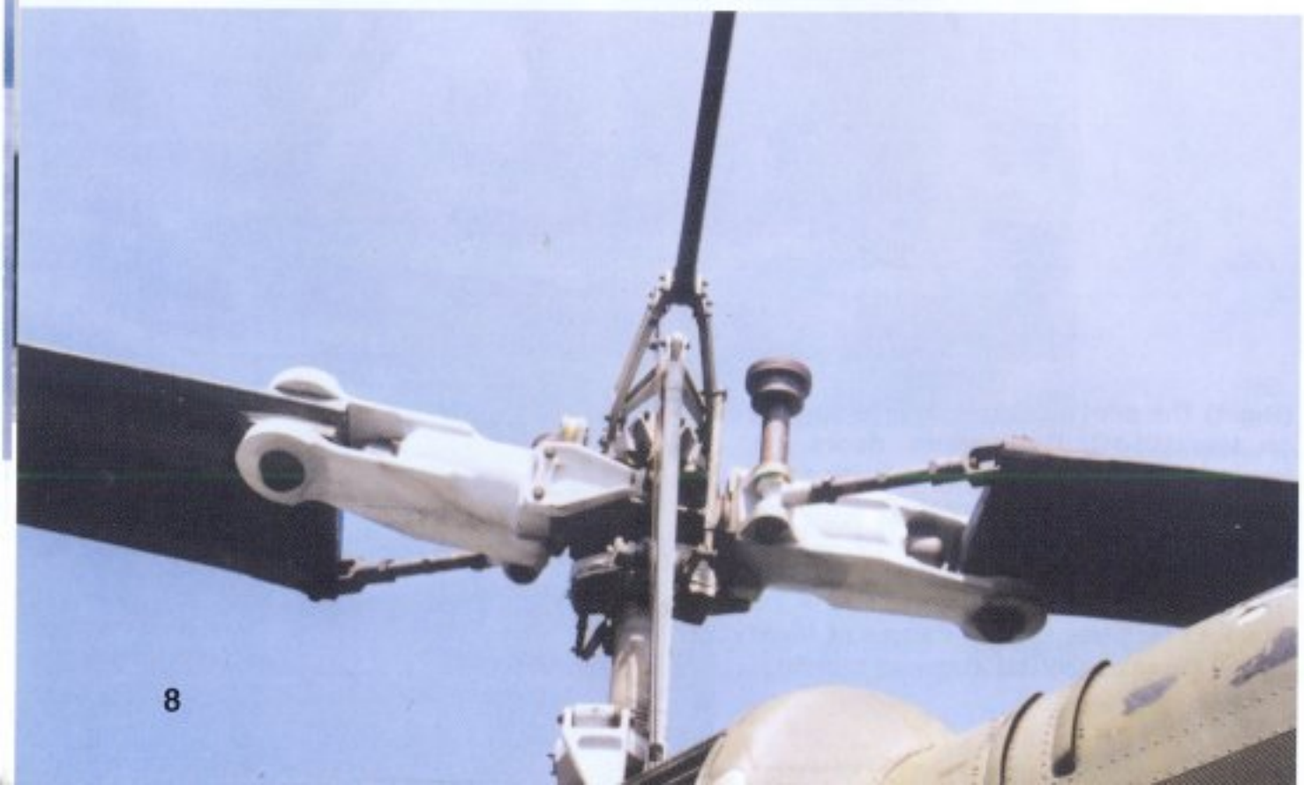


(Above) An overhead electrical systems switch panel is mounted on the cockpit ceiling between the pilots' positions. Circuit breakers are placed at the aft end of this panel. Green tinted overhead windows flank the panel. Soundproofing material in the Huey's crew space was a metallic gray. (Lennart Lundh)

(Right) The pilot's cockpit door is opened on this UH-1C. Both pilots' doors are hinged at the front and operated with a yellow latch at the door's rear. A strap for closing the door from inside the aircraft was attached to the door's window frame. The cockpit interior of this machine is flat Black to facilitate the crew's use of Night Vision Goggles (NVGs). (Lennart Lundh)

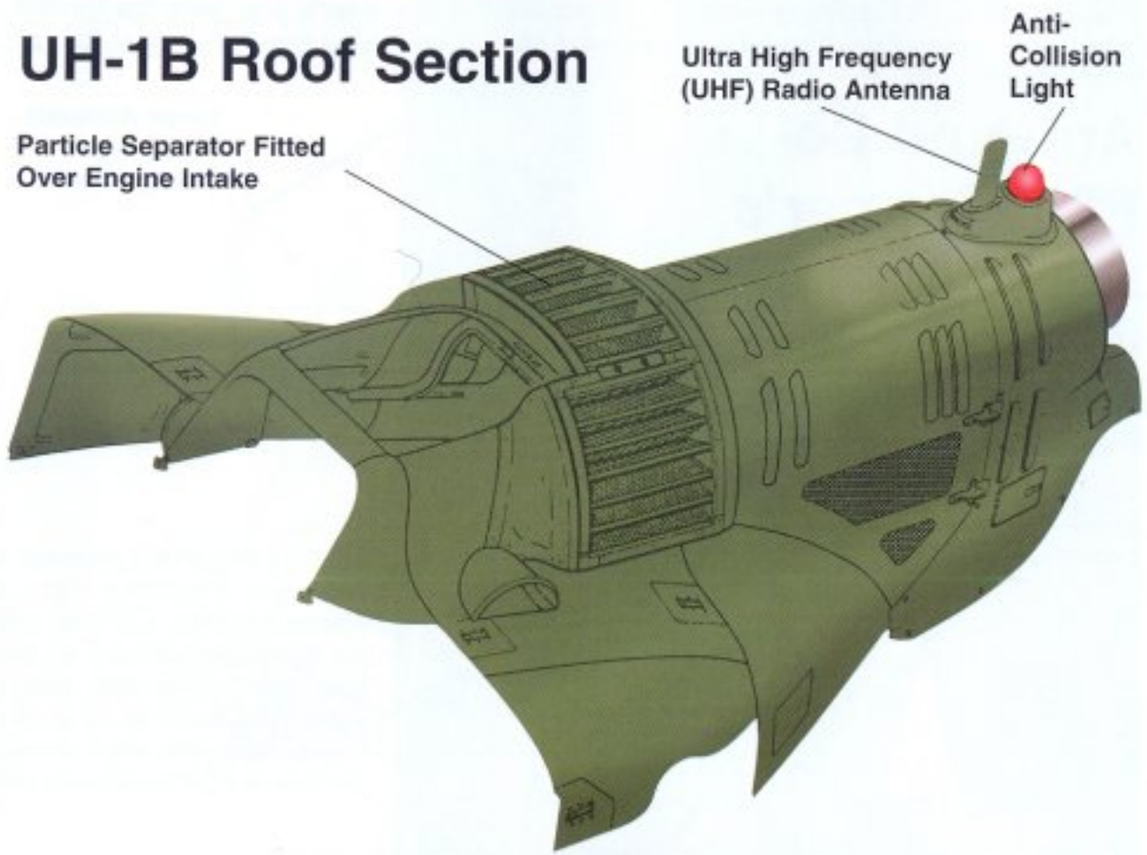
Fully opening the Huey's large cowls resulted in easy access to the engine and transmission. This mechanic works in the transmission area, which was separated from the engine section by a firewall. Power from the T53 turboshaft engine was sent to the transmission, which passed this power on to the main and tail rotors. (Ed Lemp Collection)

Counterweights are positioned above the UH-1B's rotorhead. These weights balanced the rotor disc against the weight of the rotor blades and also served as an anti-vibration device. A Bell-developed stabilizer bar was mounted above this rotorhead. (Lennart Lundh)



SP4 Charles Counts leans out to check the Emerson XM-6 weapons system on a 114th Aviation Company (AC) UH-1B. The XM-6 consisted of four 7.62MM M60C machine guns – two on each side – fed with 6000 total rounds of ammunition. The cowling snugly fit around the engine and its accessories and was disrupted only by engine intake and cooling scoops. (Wayne Mutza via Geneva Warren)

UH-1B Roof Section



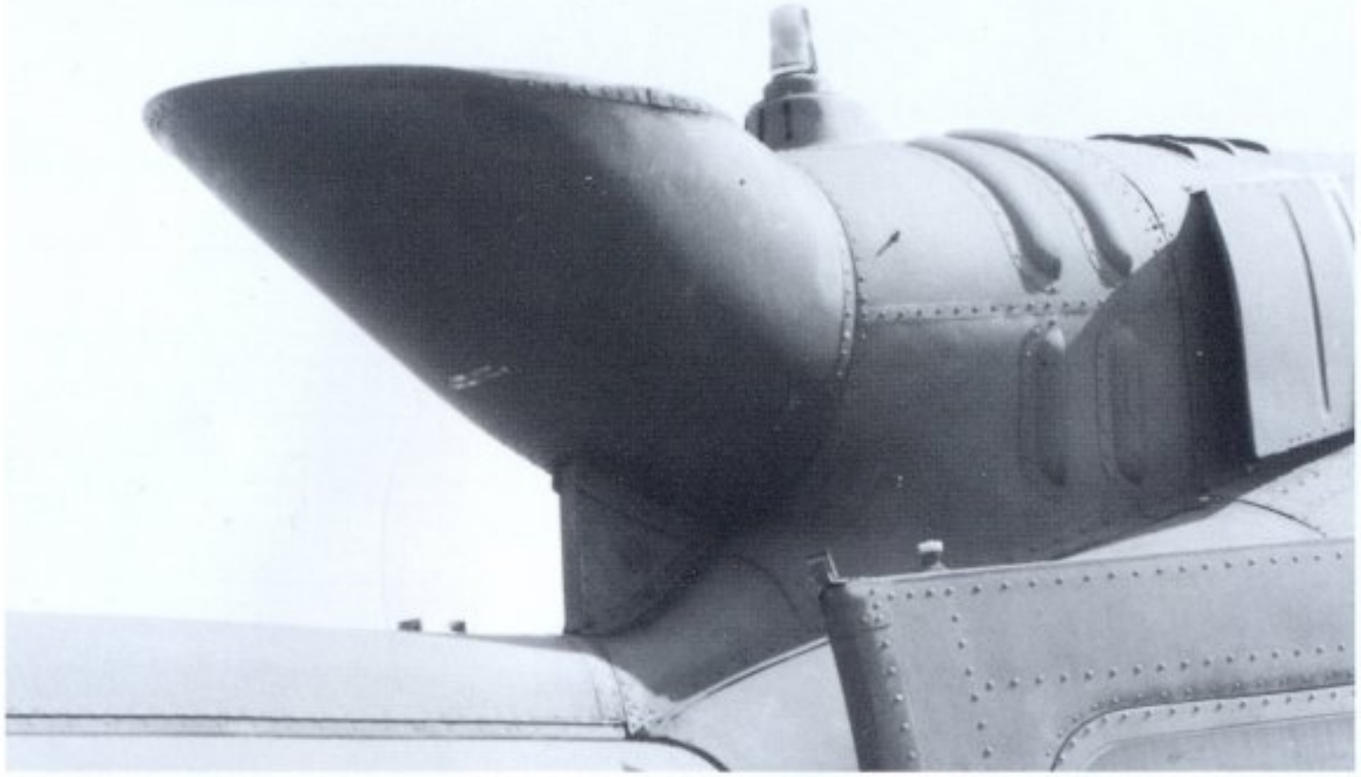
The Huey's engine and exhaust sections are well vented for heat dissipation. A small access panel is mounted below the aft vents of this UH-1B's exhaust section. This panel allows maintenance crews to visually check the aircraft's exhaust. A red band indicates the engine turbine section's location. (Lennart Lundh)

The starboard side of the UH-1B's exhausts section and engine cowling is a mirror image of the port side. Screens along the sides allow heated air to escape the engine compartment. The turbine warning band is painted black on this aircraft for reduced visibility. (Lennart Lundh)

A red anti-collision light is mounted atop the Huey's exhaust section. This light is normally on when the aircraft's engine is operating. A small access door immediately below the exhaust allows for viewing the tail rotor drive shaft. (Lennart Lundh)

Many UH-1s were retrofitted with a screened particle separator over the bell-mouth engine intake. This separator was created to cope with Vietnam's dust conditions, which increased wear – and maintenance – on the T53 engine. (Lennart Lundh)

A transmission cooling duct is mounted immediately forward of the transmission assembly at the base of the main rotor shaft. Non-skid material was later applied to the roof's aft area to provide a secure footing for maintenance personnel. The anti-downwash cabin roof strake and the four cabin ventilation air intake scoops were standard on all Hueys. This strake was added during the prototype's development and rectified an air flow problem over the cabin roof. A teardrop-shaped Automatic Direction Finder (ADF) antenna was mounted on the cabin roof of early UH-1Bs. ADF is a navigation aid that homed in on radio signals from ground stations. A green position light is mounted in a fairing just above the cabin opening. A red light is in a similar mount on the left side. The blade antenna on the forward roof area is for the Very High Frequency (VHF)/Ultra High Frequency (UHF) radio equipment. Protective film covers the two green-tinted upper windows – nicknamed the 'greenhouse' – during the helicopter's manufacture. (Bell)



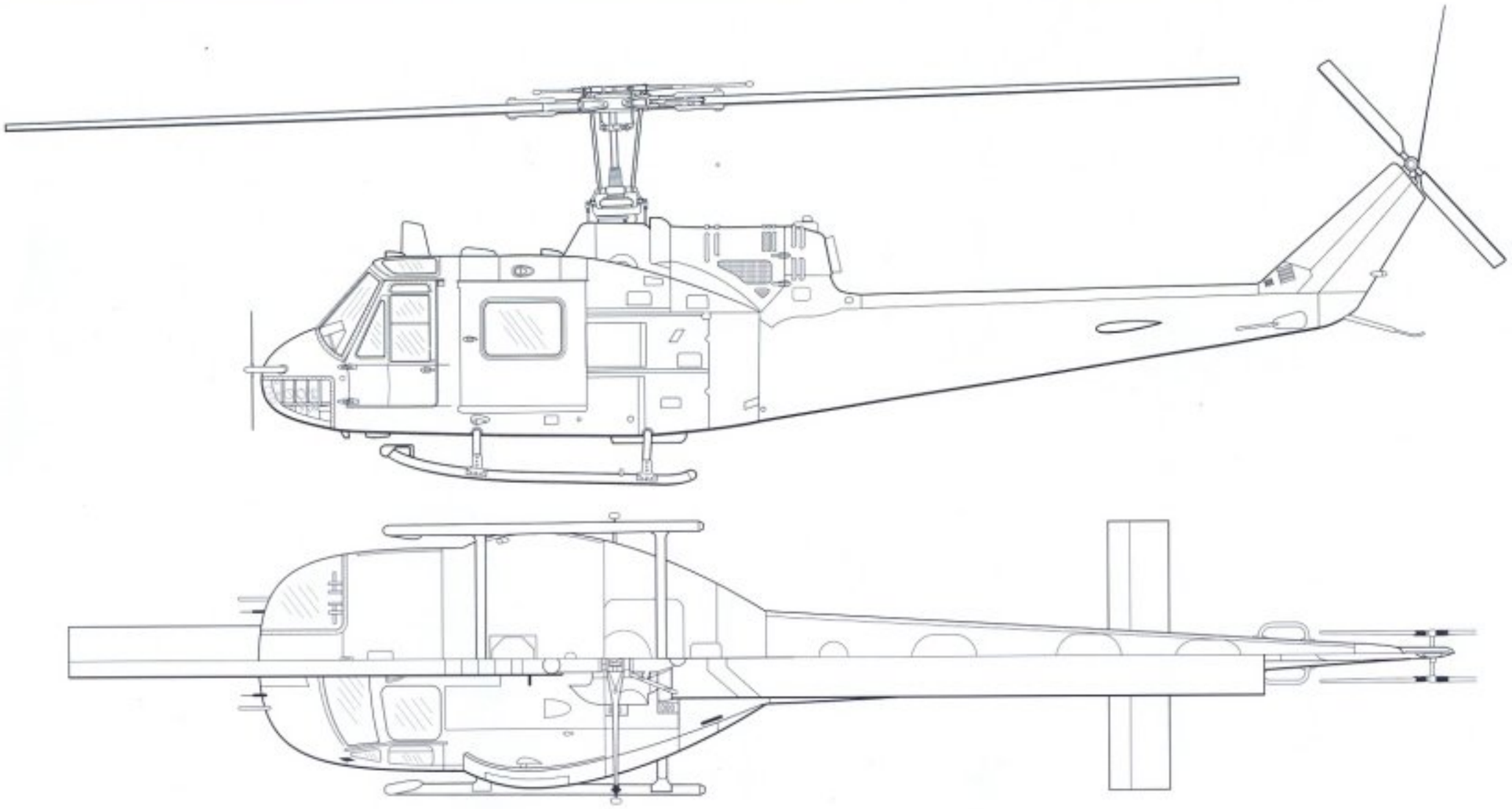
A few Huey gunships were equipped with an upturned exhaust shroud late in the Vietnam War. This shroud directed hot exhaust gasses into the rotor downwash, which reduced the heat signature. It provided protection against Soviet-made *Strela 2* (SA-7 'Grail') man-portable heat-seeking Surface-to-Air Missiles (SAMs). North Vietnamese troops began using these missiles during their offensive in April of 1972. (John Hairell)

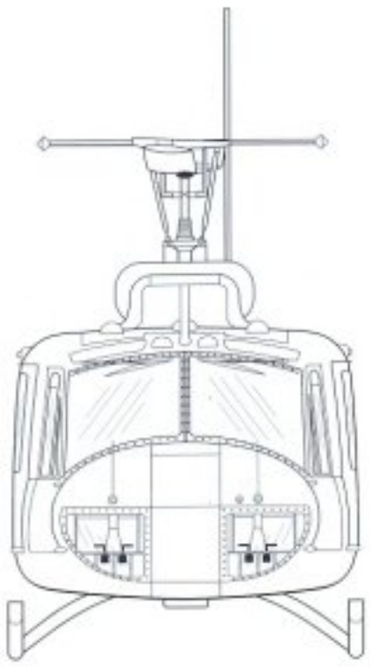
Two forward hinges attached the Huey's pilots' doors to the forward fuselage. An emergency jettison cable ran through these hinges. Either pilot activated this cable to swiftly remove this door. Pilot doors were often removed in Vietnam for added ventilation, greater visibility, room for pilots to fire small arms, and quick egress in the event the aircraft crashed. (Lennart Lundh)

Two windows are mounted in the left pilot's door; the right door is a mirror image of this door. A handle attached to the Plexiglas panel allowed the pilot to partially open the window. Dark Gull Gray doors with flat Orange-Yellow (FS33538) outlines were standard for Huey interiors. The Orange-Yellow outlines indicated emergency exits for ground crews. (Lennart Lundh)

The low profile Huey design won favor with aircrews and mechanics for its ease of maintenance. Most compartments were readily accessible. The transmission cowling and exhaust shroud of this UH-1B was removed for servicing in the field. The engine cowling and tail rotor drive shaft cowling, running the length of the upper tail boom and vertical stabilizer, are opened. This 1964 view illustrates the flat OD scheme used to tone down the original high visibility markings. Main rotor blades had OD upper surfaces and flat Black lower surfaces, with Orange-Yellow tips. Tail rotor blades were flat Black, with flat Insignia Red (FS31136) and flat Insignia White (FS37875) bands. (Bell)

This UH-1B (62-12550) was assigned to a training unit. Fluorescent Red-Orange (FS28913) panels on the nose and upper fuselage were added to the overall flat OD scheme. This Huey is equipped with an early XM-6 machine gun system. Ammunition for the four 7.62MM M60D machine guns was fed from a 6000-round magazine fitted in the main cabin. The ammunition belts ran from this magazine through chutes to the guns. A 'High Line' HF radio antenna is mounted on the tail boom. A strap secures one of the main rotor blade tips to the tail boom. This prevents the main rotor from freely moving in the wind while the UH-1B sits on the ground. (Jack M. Friell)



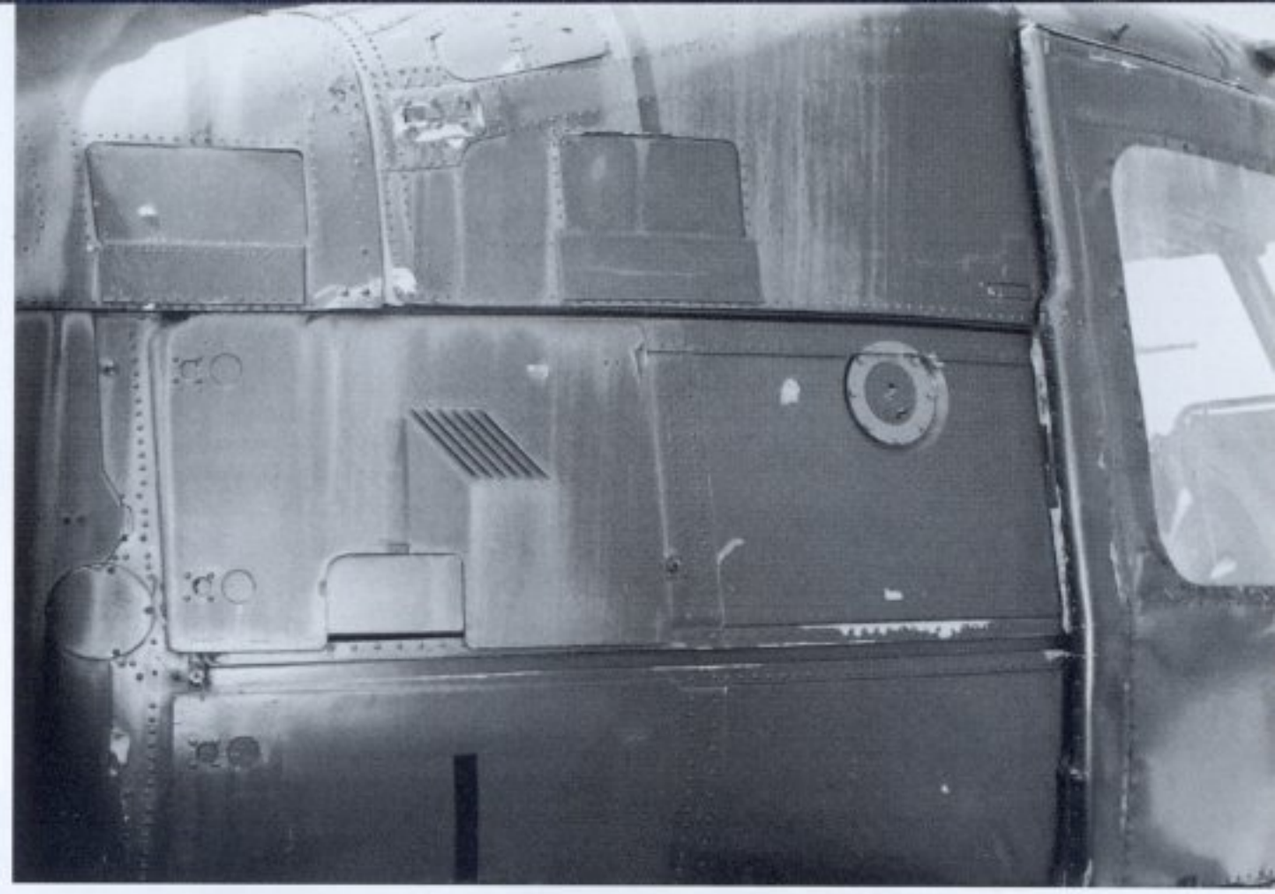


Bell UH-1B Iroquois Specifications

Main Rotor Span:....44 feet (13.4 M)
Fuselage Length:....38 feet 5 inches (11.7 M)
Height: .....14 feet 7 inches (4.4 M)
Empty Weight: .....5055 pounds (2293 KG)
Maximum Weight: ..9500 pounds (4309 KG)
Powerplant: .....One 1100 SHP Lycoming T53-L-11 turboshaft engine
Armament: .....Various options, including: two 7.62MM XM-34 Miniguns with 4000 rounds or four 7.62MM M60C machine guns with 600 rounds per gun on the fuselage sides; two M60s with 200 to 500 rounds per gun in the cabin doorways; two 24-round XM-3, seven-round XM-157, or seven-round XM-158 launchers for 2.75-inch (70MM) Folding Fin Aircraft Rockets (FFARs); one 40MM XM-5 grenade launcher system in the nose.

Performance:
Maximum Speed:..138 MPH (222 KMH)
Service Ceiling: ....21,000 feet (6401 KM)
Range: .....286 miles (460 KM)
Crew:.....Two

Two windshield wipers were standard for all Huey models, including this UH-1C. Wiper stops were attached at the top of the large Plexiglas panels. This Huey's nose bears the unmistakable evidence of having been armed with a nose-mounted 40MM XM-5 grenade launcher. An additional panel was bolted onto the avionics compartment access panel on the upper nose, while a circular indentation appears in the lower nose. (Author)



(Above) All Huey models had two parallel channels along the left and right sides. These grooves allowed the cabin doors to slide open aft. This UH-1B had hinged kick steps and a fuel filler cap along the right side. The later UH-1C's fuel filler was relocated to the left side. The UH-1B had a total fuel capacity of 165 gallons (625 L). (Author)

(Right) A cockpit step was mounted to the forward end of each Huey landing skid. The pilot or co-pilot placed one foot onto this step while entering and exiting the aircraft. A tow ring is attached to the skid's inside surface. The downward vision window in the lower nose allowed the flight crew to see terrain and objects below the helicopter. (Author)

This Huey's serial number (64-14102) identifies this as the second UH-1C built; however, it has the nose-mounted FM antennas common to the earlier UH-1B. Several UH-1Bs were retrofitted with UH-1C tail booms after their original booms failed or received battle damage. This state of affairs made identification of UH-1Bs and UH-1Cs difficult. The UH-1C's 540 rotor system and port side fuel filler provided positive means of differentiating between the two. Bell displayed this UH-1C in high visibility markings on the overall glossy OD scheme. It is armed with a nose-mounted 40MM XM-5 grenade launcher and seven-tube 2.75-inch XM-157 rocket launchers mated with 7.62MM XM-134 Miniguns. Test equipment is fitted inside the orange fairing mounted atop the main rotor. (Bell)

All Hueys have a tail rotor drive shaft that runs down the length of the tail boom and vertical stabilizer. This shaft transferred power from the engine to the tail rotor. A mechanic has opened the hinged tunnel cover to service the drive shaft of this UH-1B. This helicopter is equipped with synchronized elevators with a symmetrical airfoil. Engine exhaust has stained the tail boom black. (Ed Lemp Collection)

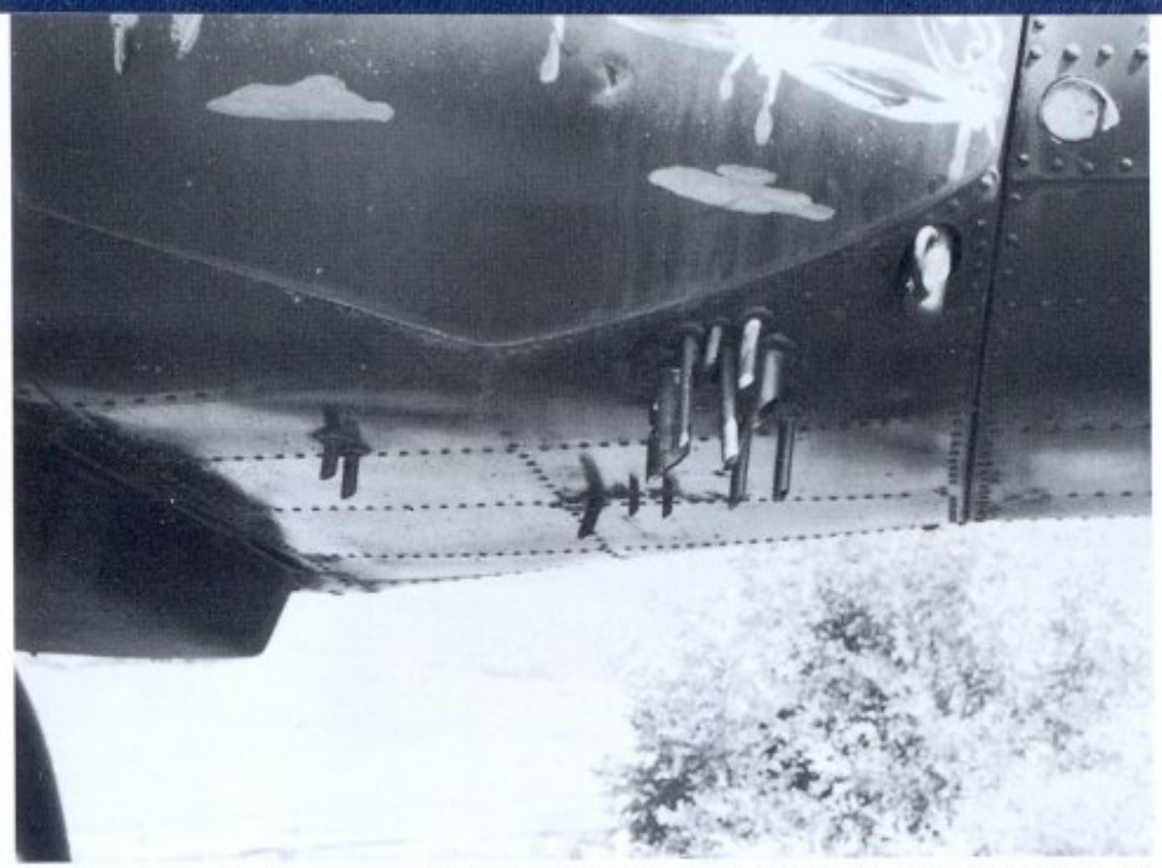
The right rear vented panel of the Huey's fuselage provided access to armament system electronic equipment. A stop is located at the rear of the cabin door channel. A large rectangular Direction Finder (DF) sense antenna is mounted on the Huey's underside, immediately aft of the rear skid cross tube. (Author)

Huey troop seats were originally covered with red nylon, which was later changed to green for reduced visibility in the field. These seats could be folded up against the aft transmission wall. Soundproofing material covering the wall and ceiling was a metallic gray color, similar to Dark Gull Gray. (Lennart Lundh)

Limited cabin space meant that ammunition storage boxes and feed chutes were secured under the bench seat. Up to four people sat on this bench, with each occupant provided with a lap safety belt. (Lennart Lundh)

A retractable landing/search light is mounted on the UH-1's lower nose, between the downward vision windows. This light was extended forward when the pilot turned it on. A small blade Identification Friend or Foe (IFF) antenna is located immediately aft of this light, while a marker beacon antenna is placed aft of the IFF antenna. (Author)

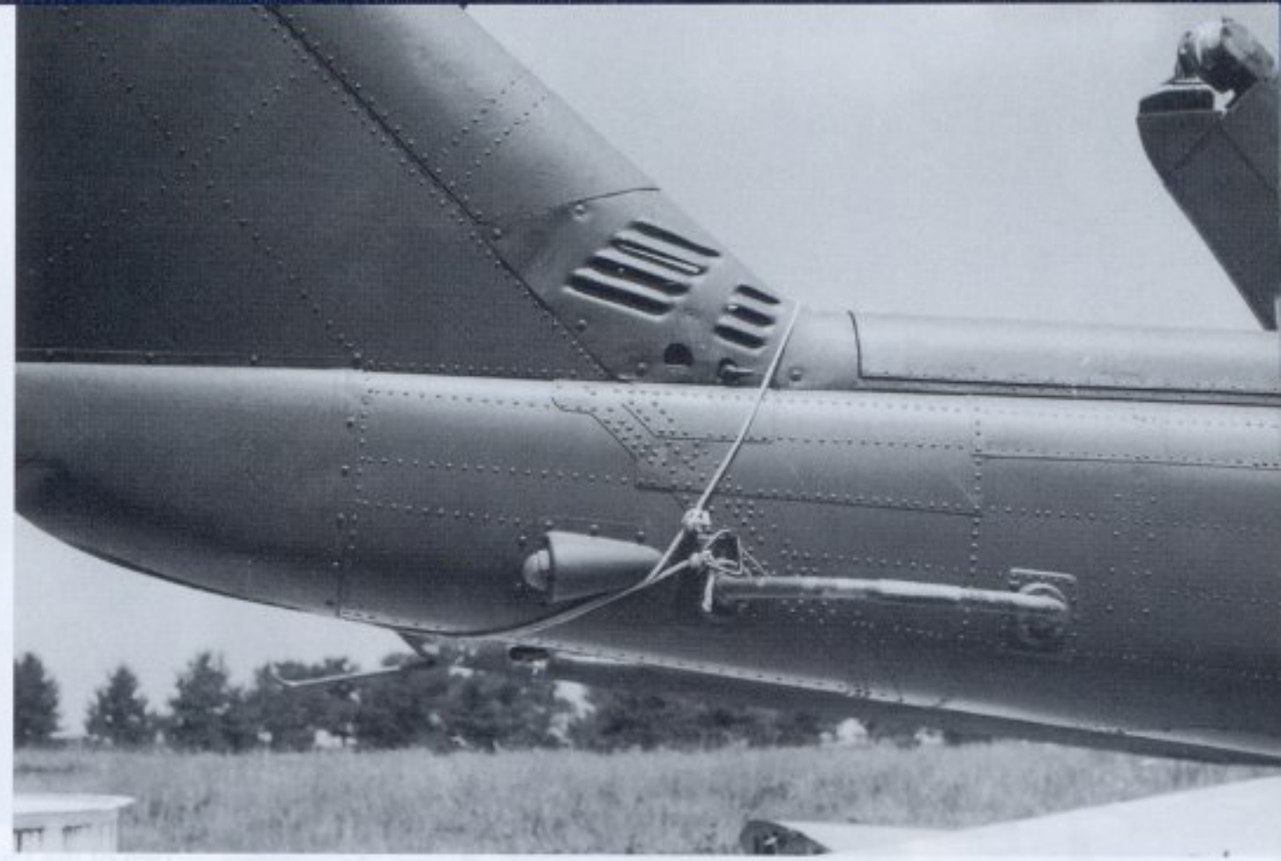
The aft skid cross tube runs immediately forward of the rectangular DF sense antenna on the UH-1's undersurface. Both the left and right Huey landing skids are connected to fore and aft cross members. The transmission well is located just forward of the cross skid. (Author)



The Huey's fuel drain gang was located on the left underside fuselage, just forward of the tail boom. Fuel is vented through these drains when needed to lighten the aircraft in an emergency. (Lennart Lundh)

Two UH-1Bs undergo maintenance at the Corpus Christi Army Depot in Texas. Access covers are removed from the engine compartments. A Beech C-45 Expediter is parked immediately aft of these two UH-1Bs. A de Havilland of Canada C-7 Caribou transport is parked in the background, along with two more Hueys and a Sikorsky UH-34 Choctaw. (US Army)

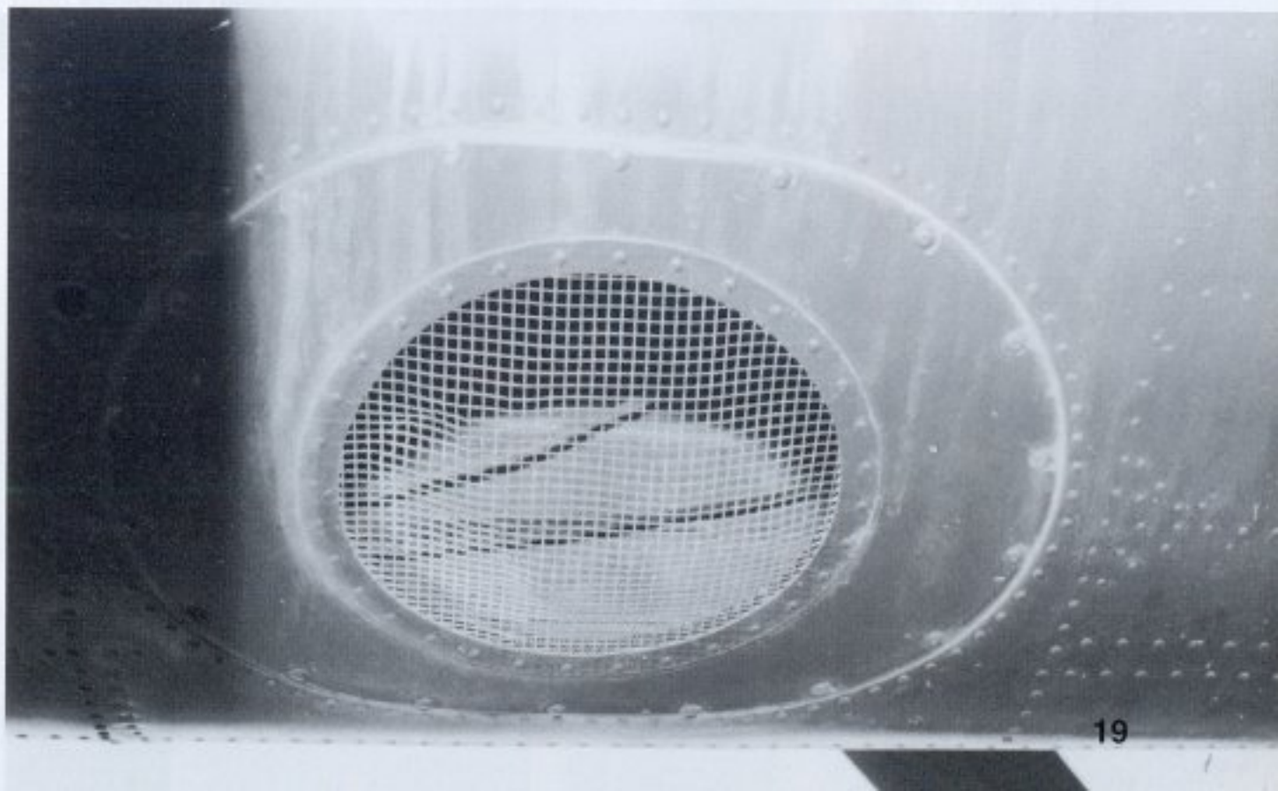
A fiberglass fairing covered the end of the UH-1's tail boom. A tailskid mounted onto this fairing protected the tail rotor from damage due to an excessively high angle of attack. The vertical stabilizer's leading edge was hinged to the left for access to the tail rotor drive shaft. (Lennart Lundh)



A vented fairing covered the 42° bevel drive gearbox, which joined the tail rotor drive shaft running from the transmission. White position lights and loop-shaped VHF omnidirectional (omni) antennas were mounted on each side of the tail boom. (Author)

The synchronized elevators of the UH-1C were much larger than those of the UH-1B, and had an asymmetrical airfoil. The chord (width) from leading edge to trailing edge was increased to 2 feet 4 inches (0.7 M) on the UH-1C. These all-moving elevators – linked to the flight control system – enhanced trim. The elevator span was 9 feet 4 inches (2.8 M). (Author)

Four oval access panels are located on the tail boom's undersurface. The forwardmost of these panels is the only one covered by a wire screen, which allows for ventilation of this area. (Lennart Lundh)



Both VHF omni antennas appear as large handles on both sides of the aft tail boom. These antennas receive navigation signals from ground stations, which are fed into the Huey's navigation system. Roundhead protruding rivets secure the metal skin to the airframe. (Lennart Lundh)

Two of the four oval access panels on the tail boom's underside are located forward and aft of the elevators. Unlike the screened forward panel, these two panels have solid coverings. Maintenance crews opened these panels to access the aft tailboom components. (Lennart Lundh)

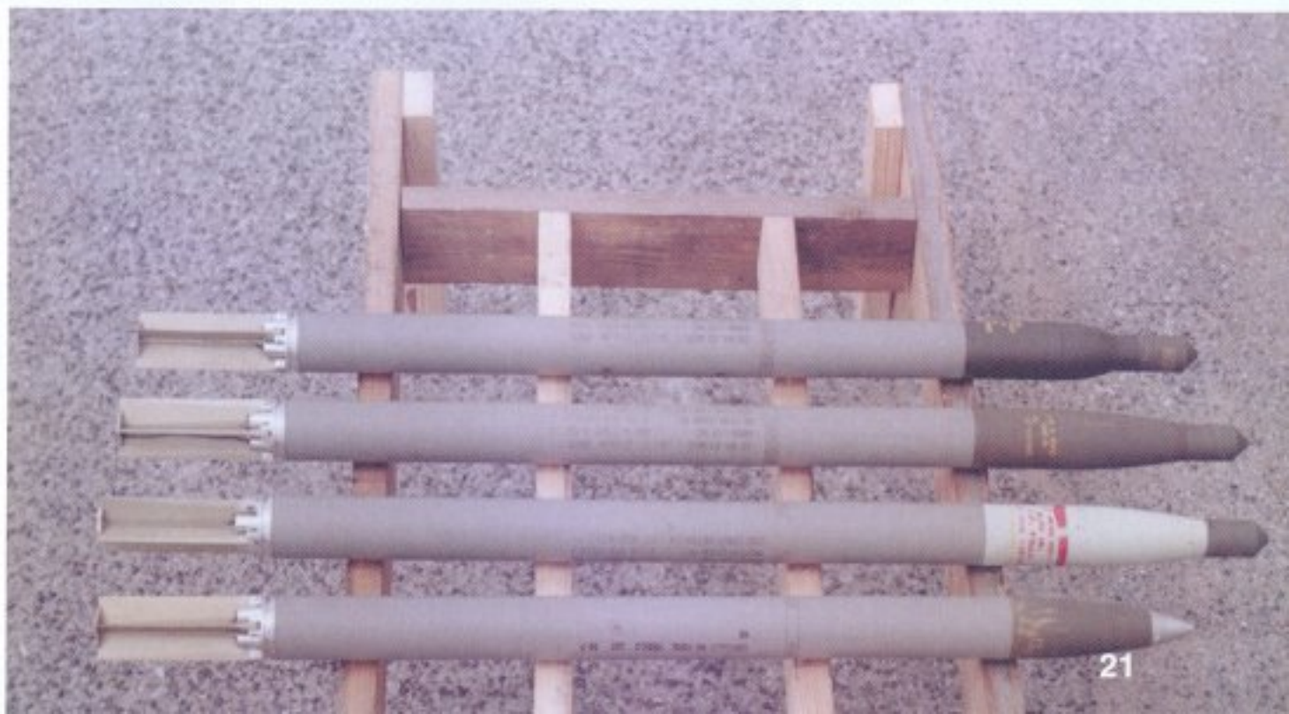
The transmission well – better known to Huey crews as the 'hell hole' – is located on the fuselage undersurface directly below the rotor mast and between the skid cross tubes. The main cabin deck support beam is mounted across this well, while numerous hydraulic lines run through this area. (Lennart Lundh)

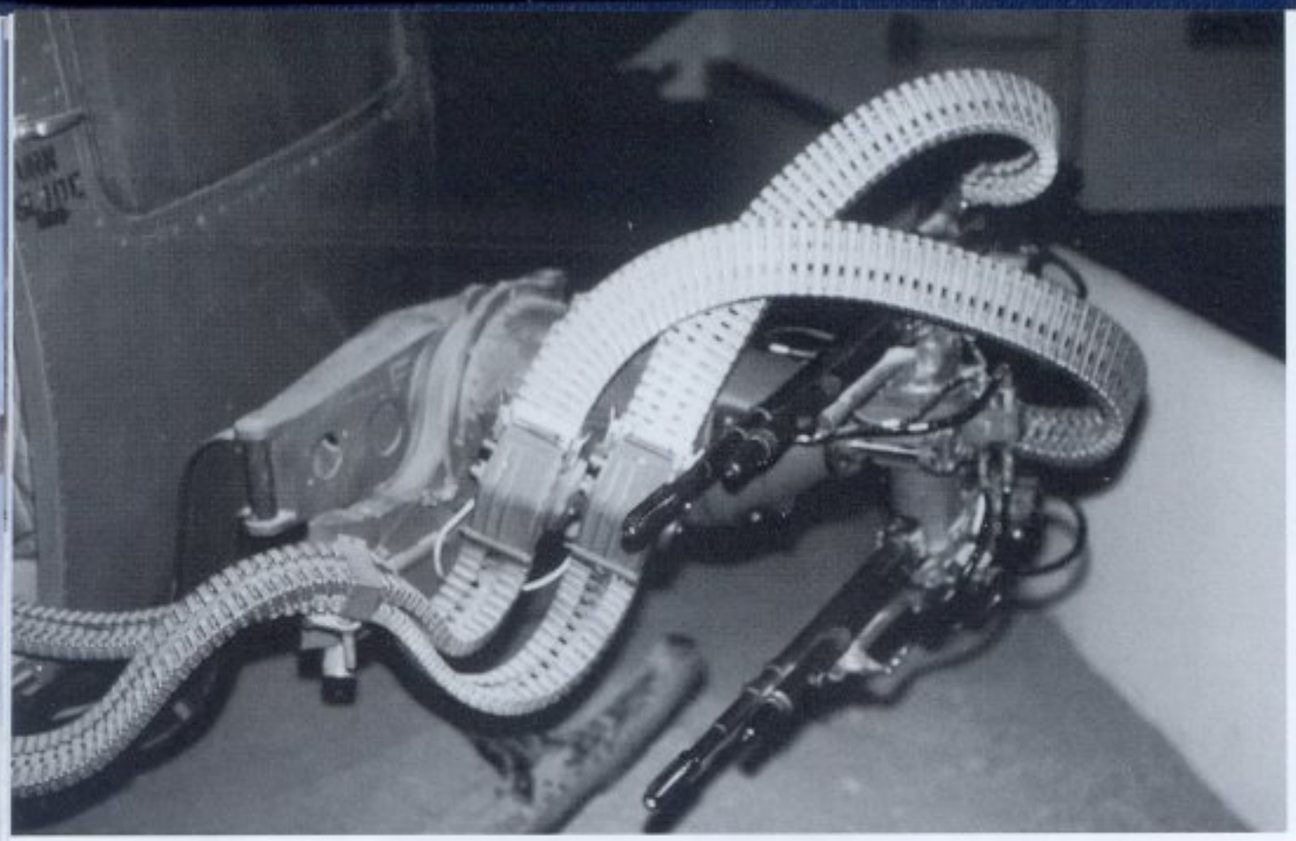
Early Huey armament experiments resulted in the MA-2 eight-tube 2.75-inch (70mm) rocket system and XM-6 quad 7.62mm M60C machine gun mount. This UH-1B also wore an experimental camouflage scheme of Dark Green (FS34079) and Olive Drab. The horizontal bar in the cabin doorway is believed to have supported a crew-operated 7.62mm M60 machine gun. (US Army)

A UH-1B assigned to the 120th Aviation Company is armed in the 'Heavy Hog' configuration in 1966. This consisted of right and left mounted 24-tube 2.75-inch XM-3 rocket launchers and the nose-mounted 40mm XM-5 grenade launcher. The 120th was based at Tan Son Nhut Air Base (AB), South Vietnam from 1963 until 1969, when it was transferred to Bien Hoa AB. (Terry Love)

The 2nd Battalion, 20th Aerial Rocket Artillery (ARA) Regiment, 1st Cavalry Division (Airmobile) flew this XM-3 armed UH-1B. This Battalion was based at An Khe, South Vietnam in late 1966. The rocket system's Mk VIII aiming sight is located in the pilot's position in the right cockpit. (Jerry R. Barnes)

Four commonly used 2.75-inch Folding Fin Aircraft Rockets (FFARs) are displayed on a rack. The warheads for these rockets are (from front): the M151 armor-piercing Pearlite Malleable Iron (PMI), M156 White Phosphorous (WP), and two versions of Mk43, Mod 1 High Explosive (HE). The blue-gray body color was eventually replaced by white. (US Air Force)



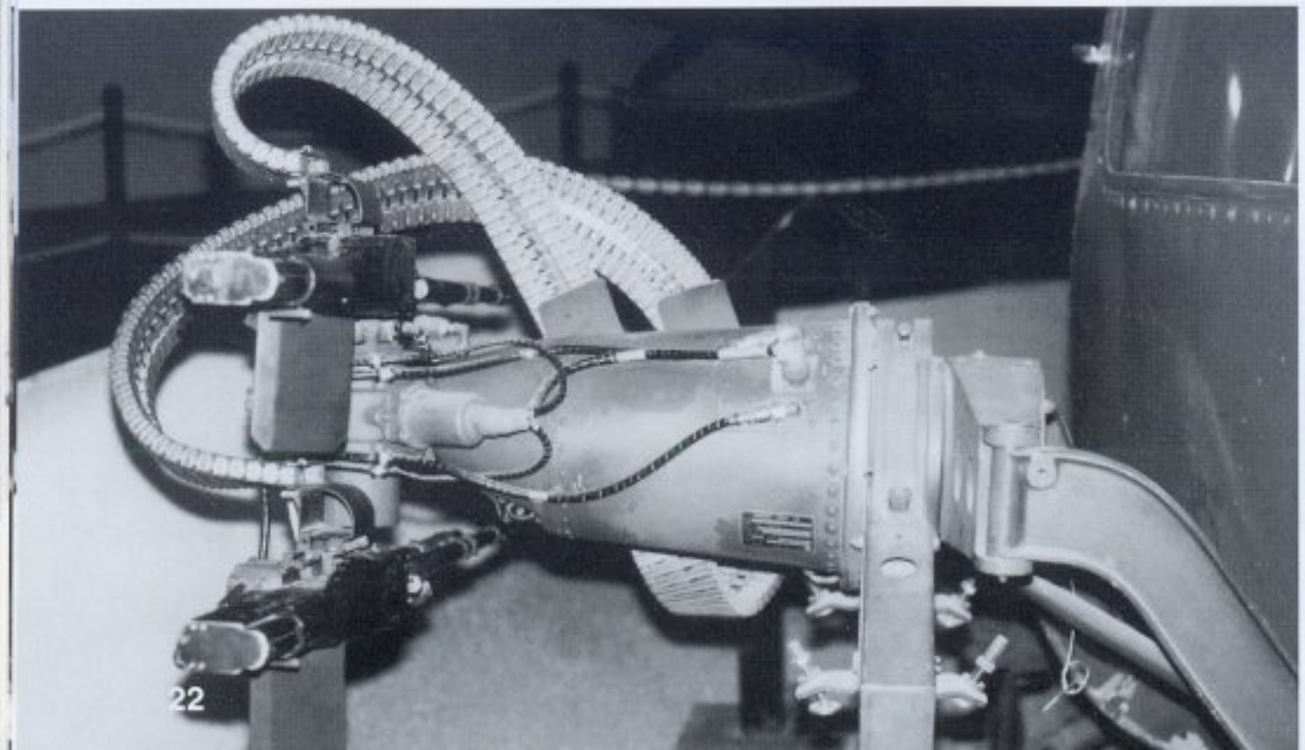


The 7.62mm XM-6 quad machine gun system – two guns per side – became the standard Huey armament early in the Vietnam War. This came after early trials employing .30 caliber (7.62mm) Browning M37 machine guns. The XM-6 was labeled the XM-16 when carried on the Bell-designed XM-156 universal mount, which also allowed the fitting of rocket launchers. (Lennart Lundh)

The XM-6 used two 7.62mm M60CA1 machine guns per side. The co-pilot elevated these weapons +10° to -85°, or flexed them 10° inboard or 70° outboard. Flexible metal ammunition chutes led to twelve 500-round ammunition boxes in the aft cabin. The chutes were routed through the fuselage and cabin floor to clear the sliding cabin door. (Lennart Lundh)

This XM-6 machine gun system is mounted on an XM-156 mount located on this UH-1B's left side. Black electrical wiring on this mount is associated with the XM-6's elevation and slewing motor. The M60CA1 has a muzzle velocity of 2085 feet (636 m) per second and a cyclic firing rate of 550 rounds per minute. (Lennart Lundh)

Augmenting the Huey's fixed armament systems were 7.62mm M60A machine guns operated by the crew chief to the left side and door gunner to the right. Crew operated M60s were attached to either pintle post mounts or (here) suspended from bungee cords. The latter gave crewmen greater fields of covering fire. (Morris Miller)



This HU-1A (2/59-1673) of the Utility Tactical Transport Helicopter Company (UTTHCO) skims the South Vietnamese earth. It was armed with MA-2 rocket launchers and .30 caliber M37 machine guns. It is finished in the overall glossy Olive Drab (OD) scheme with high visibility markings painted on early Hueys. The UTTHCO brought the first armed Hueys to Vietnam on 25 July 1962. The HU-1As flew their first mission in Vietnam – escorting Vertol CH-21 Shawnee transport helicopters – from Tan Son Nhut AB on 2 August 1962. (US Army)

UH-1A/B/C Weapons

.30 Caliber (7.62MM) Browning M37 Machine Gun

Barrel Length:.....24 inches (610MM)
Feed: .....250-round belt
Muzzle Velocity: .....2800 feet (853 M) per second
Rate of Fire: .....500 rounds per minute

7.62MM M60 Machine Gun

Barrel Length:.....22.04 inches (560MM)
Feed: .....500-round belt
Muzzle Velocity: .....2805 feet (855 M) per second
Rate of Fire: .....550 rounds per minute

2.75-Inch (70MM) Folding Fin Aircraft Rocket (FFAR)

Motor: .....Mk 40, Solid Propellant
Length Without Warhead: ..39.3 inches (99.8 CM)
Weight Before Firing:.....11 pounds (5 KG)
Motor Burn Time: .....1.55 to 1.69 seconds
Velocity at Motor Burnout: 1965 feet (599 M) per second
Maximum Range: .....8836 yards (8080 M)

The UTTHCO employed this UH-1B (62-1877) as an armament test bed in Vietnam. This Huey is armed with 19-tube 2.75-inch rocket launchers with breakaway nose fairings. The Huey was experimentally camouflaged with flat Black and Tan (FS30219) bands applied over its OD scheme. Orange-Yellow crossed sabres are painted on the left cockpit door. This emblem is usually associated with cavalry units. (US Army)

Ammunition for the XM-16 quad gun system was routed through lengthy chutes attached to storage boxes in the cabin. These metal ammunition boxes are mounted under the aft cabin seats. The XM-156 mount allowed 2.75-inch rocket launchers to be carried with the machine guns; however, weight limitations restricted the use to seven-tube launchers.

The breakaway fairing on the launcher's nose provided reduced air resistance until the first rocket was fired, which jettisoned the fairing. This UH-1B had solid cabin seat material, instead of the webbed nylon material usually found on Hueys. (Bell)

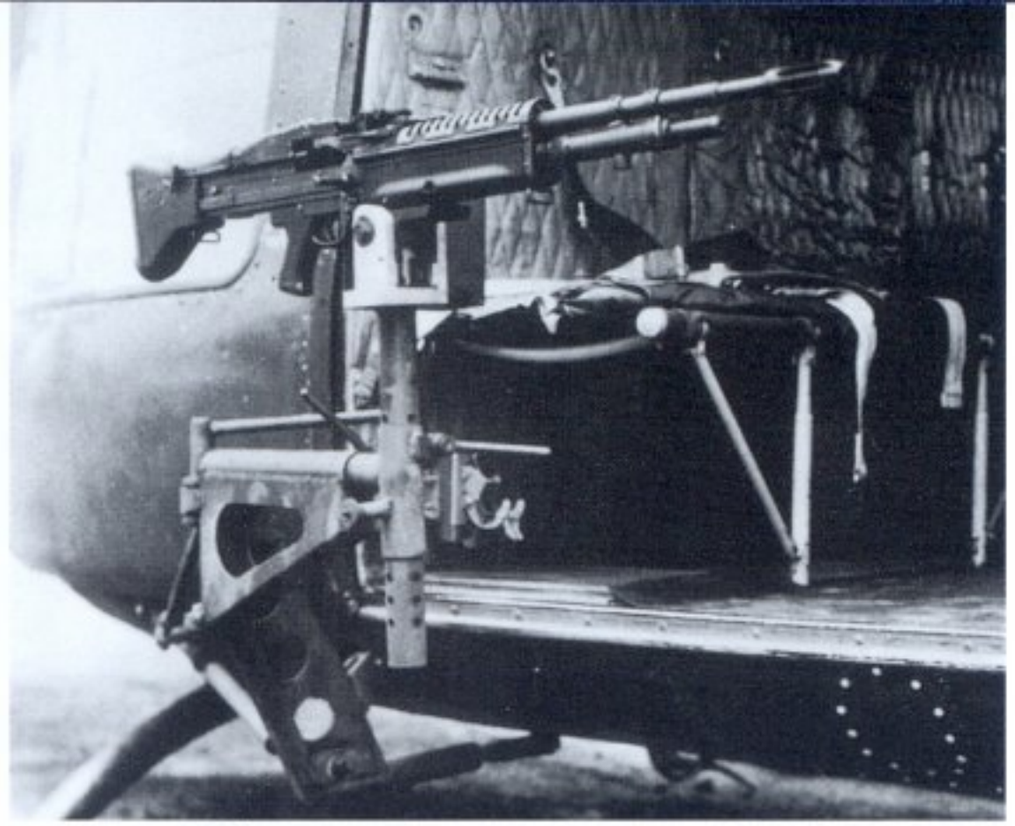
The XM-6 quad system is mounted on a UH-1B of the 11th Air Assault Division at Fort Stewart, Georgia in 1965. The cabin seats were folded upward for access to the ammunition boxes. The 11th Air Assault Division was renamed the 1st Cavalry Division (Airmobile) prior to its deployment to Vietnam in 1965. (Ed Lemp)

The XM-16 system is installed on this UH-1B of the 120th Aviation Company (AC) in Vietnam in 1966. A tarpaulin covers the two right 7.62MM M60C machine guns between missions. Machine guns were commonly covered to protect intricate components from rain and dirt. (Terry Love)

This UH-1C's XM-6 system was mated with seven-tube XM-158 rocket launchers in 1967. The cluster of rocket tubes allowed for replacement of individual tubes, unlike the earlier seven-tube canister launchers. Flash suppressors were seldom fitted to the 7.62MM machine gun barrels. (Charles B. Mayer)

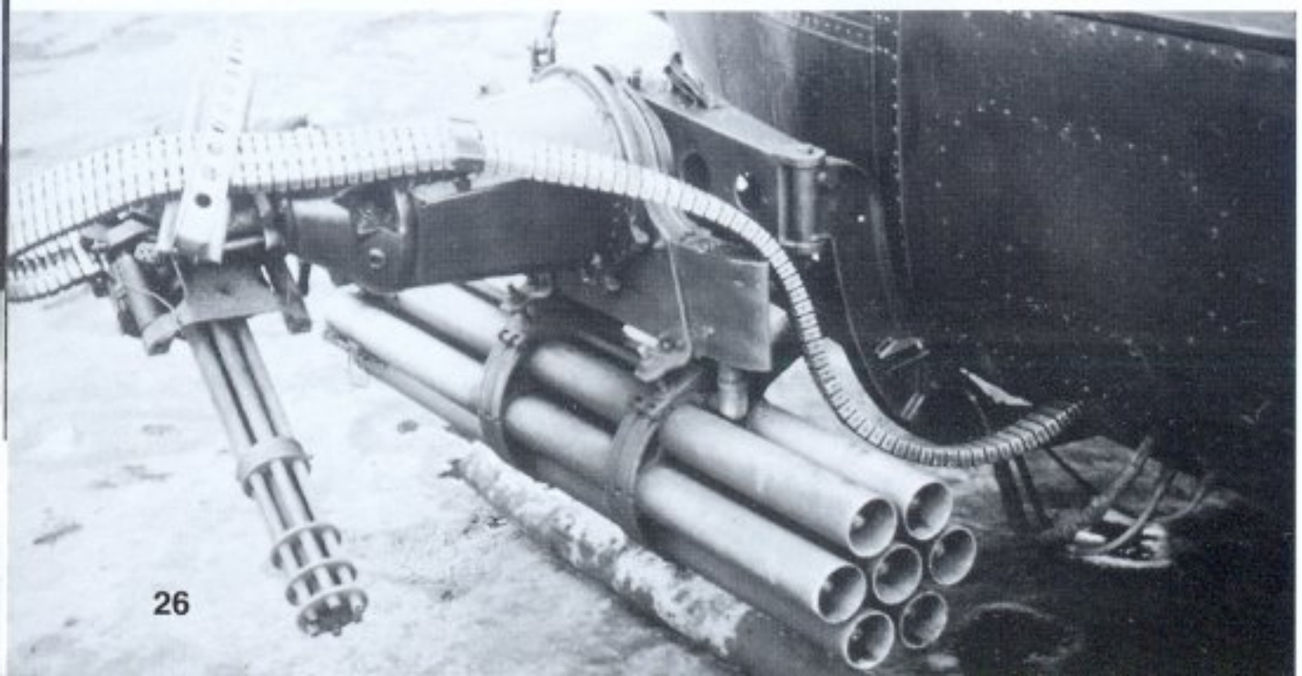
The XM-5 subsystem is comprised of a 40MM M75 grenade launcher and ammunition storage. Ammunition was stored in a 150-round container or a 302-round drum, either of which were in the cabin. The system's weight required three support braces on each side of the nose. A 0.75 pound (0.3 KG) 40MM round is exhibited atop the ammunition chute. (Morris Miller)

A 120th AC UH-1B sits in its revetment in Vietnam. It is in a 'Heavy Hog' configuration, comprised of the XM-3 and XM-5 systems. FFARs were fired in pairs from the 24-round XM-3 launchers – one from each side – to equalize firing loads on the Huey's airframe. The helicopter rests on a metal plate, which ensured a secure parking space when the surrounding ground became mud during rainy periods. (Terry Love)

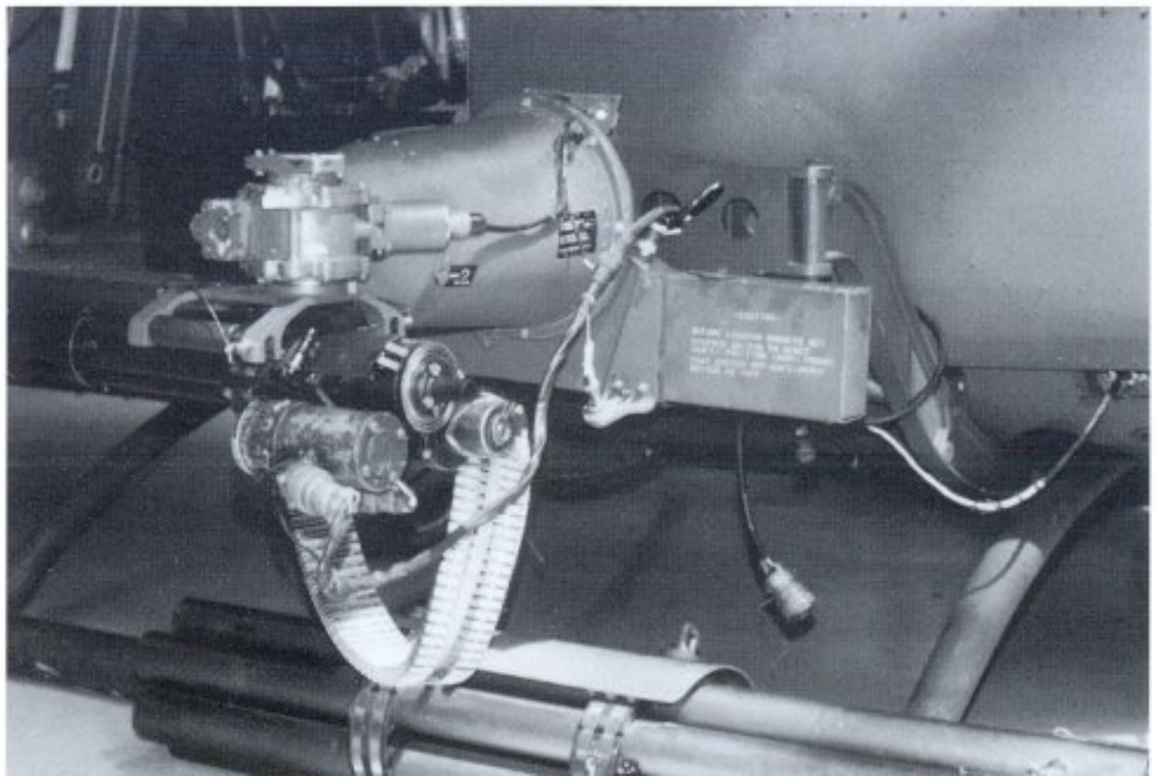


Two crew-operated 7.62MM M60 machine guns were an important part of the Huey gunship package. The infantry-type M60A was mounted to a swing-out 'Sagami' mount, which was common on early UH-1Bs. A soldier named Sagami devised this mount while serving in one of the first Huey units deployed to Vietnam in the early 1960s. (US Army)

The XM-21 was the most commonly used weapons system on Hueys in Vietnam. It employed the 7.62MM General Electric M-134 (later GAU-2B/A) Minigun. The electrically driven, six-barreled gun was fed ammunition through a single chute from ammunition storage containers in the cabin. This gun is at its full downward angle of -85°. The M-134 was elevated up to 10°, while its lateral angles were 70° outboard and 12° inboard. Miniguns were usually mated with 2.75-inch rocket launchers; here, a seven-tube XM-158 is installed. (Rob Mignard)



A rear angle view shows the M-134 Minigun's electric drive motor and mount assembly. Each barrel is 22 inches (56MM) long. The M-134 has a cyclic firing rate of between 2000 and 4000 rounds per minute and a muzzle velocity of 2850 feet (869 M) per second. An XM-158 rocket pod rests on the hangar floor beneath the mount. (Lennart Lundh)



The XM-16 system is fitted to this UH-1B of the 114th AC in Vietnam. The Company was deployed to Vinh Long, South Vietnam in May of 1963 and remained 'in country' until 1972. The cobra painted on the nose indicated one of the 114th's two gun platoons, the 'Cobras.' (Ed Briggs)

This 1st Cavalry Division (Airmobile) UH-1B was armed with XM-200 19-tube rocket launchers, called a 'Hog' configuration. The Huey's cowlings were opened to check the extent of damage following a Viet Cong mortar attack at Camp Radcliffe, Vietnam in 1966. The Division's black and yellow insignia on the vertical stabilizer is obscured by exhaust stains. (US Army)

The infantry type M60A is stored upright by its bungee cord. Door gunners replaced the machine gun's 200-round ammunition box that was attached to the gun's feed mechanism with a larger 500-round ammunition box secured to the cabin deck. Three purple hearts were painted on the doorpost of this 1st Cavalry Division (Airmobile) UH-1B. These are believed to indicate the three times this Huey was hit by enemy fire. (Ed Lemp Collection)

BIG TRAIN was a UH-1B (61-3978) based at Vo Dat, South Vietnam in November of 1965. This Huey is armed in the 'Heavy Hog' configuration of the nose-mounted 40MM XM-5 grenade launcher and the side-mounted 2.75-inch XM-3 24-round rocket launchers. The UH-1B retained the high visibility markings in late 1965, although the low visibility scheme was adopted earlier that year. (Lex McAulay)

Many Huey armament systems in Vietnam were elaborately painted, including this XM-200 rocket launcher. The horse on the XM-156 mount's protective plate represented the 92nd AHC at Dong Ba Thin. (Rob Mignard)

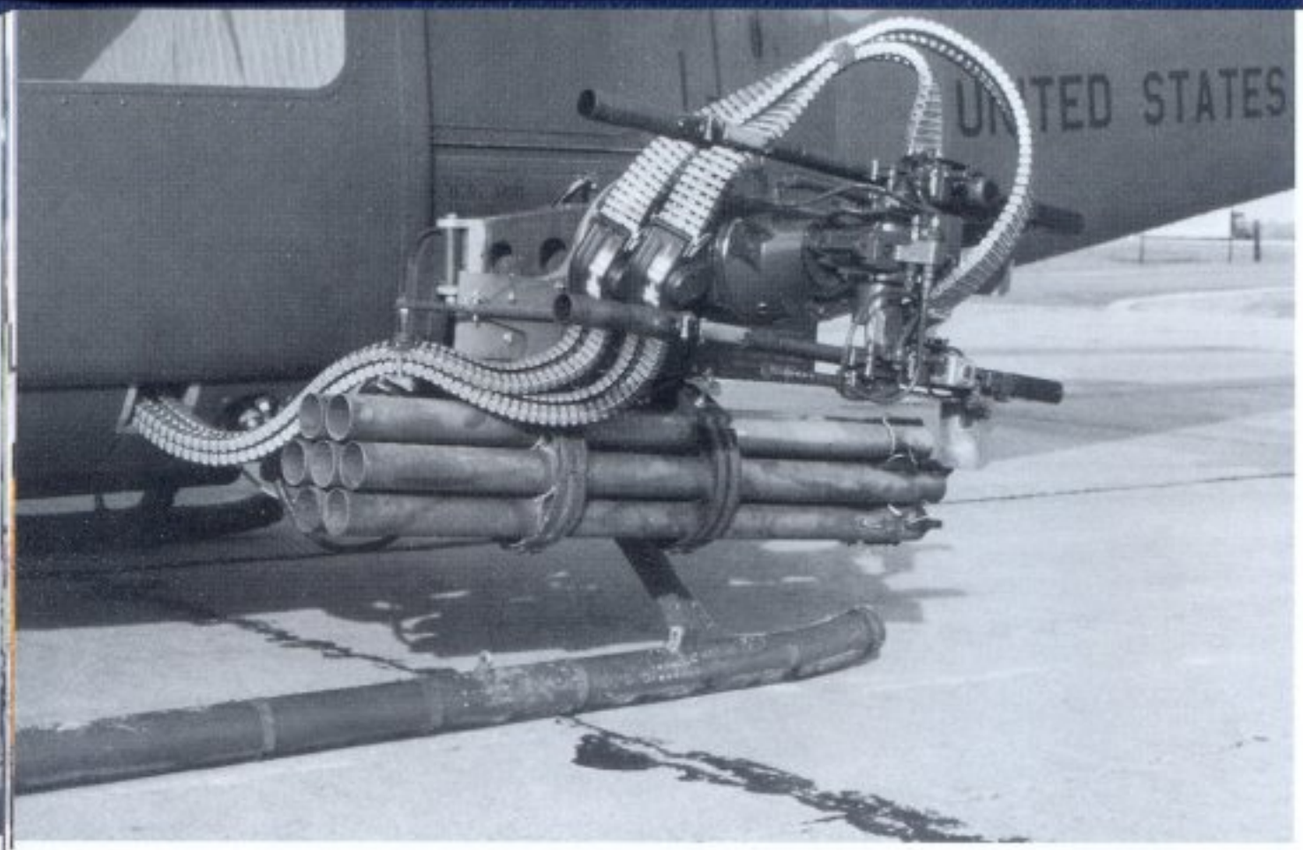
Finished in the training scheme, this UH-1B (77J/64-14077) is armed with the XM-21 system. Fluorescent Red-Orange panels on the nose and cabin doors are faded from lengthy exposure to the elements. Training of Huey crews fell under the Army Aviation Training Center, which is headquartered at Fort Rucker, Alabama. (Hugh Mills)

A 2.75-inch High Explosive (HE) rocket is loaded into an XM-158 launcher of this UH-1C. The Huey was assigned to B Troop, 3rd Squadron, 17th Cavalry Regiment at Dong Tam, South Vietnam in 1968. A support brace for the XM-156 mount is attached to the fuselage. (Morris Miller)

(Above) This factory fresh UH-1C (65-9519) displays the variant's distinguishing features. These included the Bell 540 'door hinge' main rotor system, with blade chord (width) increased from the UH-1B's 21 inches (53.3 CM) to 27 inches (68.6 CM). The vertical stabilizer's chord was increased and larger horizontal stabilizers were installed. This Huey is finished in the subdued paint scheme of overall OD with Flat Black markings introduced during 1965. (Bell)

(Above Right) This early UH-1C has the nose-mounted FM homing antennas associated with the earlier UH-1B. The Huey is armed with the XM-16 system. Red and white checks painted on the tail boom are the most prominent markings on this aircraft, which was employed on weapons tests. (Author's Collection)

(Right) The XM-3 rocket system is installed on this UH-1B of D Troop, 3rd Squadron, 17th Cavalry Regiment. This Troop's Red and White pennant is painted on the doorpost. A 50 gallon (189 L) auxiliary fuel tank was installed beneath the cabin seats. (Bell)



This Huey's XM-16 system has flash suppressors attached to the M60Cs' barrels. These devices hid muzzle flashes when the guns fired. The exposed-tube XM-158 rocket launcher installed on this UH-1 was replaced by the enclosed XM-157. (Charles B. Mayer)

This UH-1C in Vietnam carried the XM-5 grenade launcher and 12-tube rocket launchers, which were modified from 24-tube XM-3 launchers. PURE SEX in yellow is painted below the pair of eyes on the grenade launcher. Pintel mounts for 7.62MM M60 machine guns are mounted in front of the rocket launchers. (Michael W. Bedwell)

This UH-1C (119) was assigned to the 119th AC at Pleiku, South Vietnam in 1967. It is armed with the 'Frog' weapons combination, which consisted of an XM-5 grenade launcher on the nose and XM-158 rocket launchers on the XM-156 universal (multi-armament) rack. Braces for the XM-5 are visible through the chin bubbles. (Rodger D. Fetters)

After 1970, most UH-1Cs were upgraded with the 1400 SHP Lycoming T53-L-13 or L-13B engine. The switch to the L-13 resulted in the designation UH-1M. This XM-21 armed example had a long FM antenna mounted on the cabin roof. The indented nose avionics panel and bracing in the chin bubble indicated that this Huey was adapted to the XM-5 system. (Butch Lottman)

One of the first UH-1Cs was equipped in a 'Heavy Hog' configuration in 1965. FM antennas on the nose were held over from the UH-1B. This cockpit has the original bucket-type seats. The UH-1C retained the high visibility scheme applied to early Hueys. Test instruments are attached atop the main rotor. (Bell)

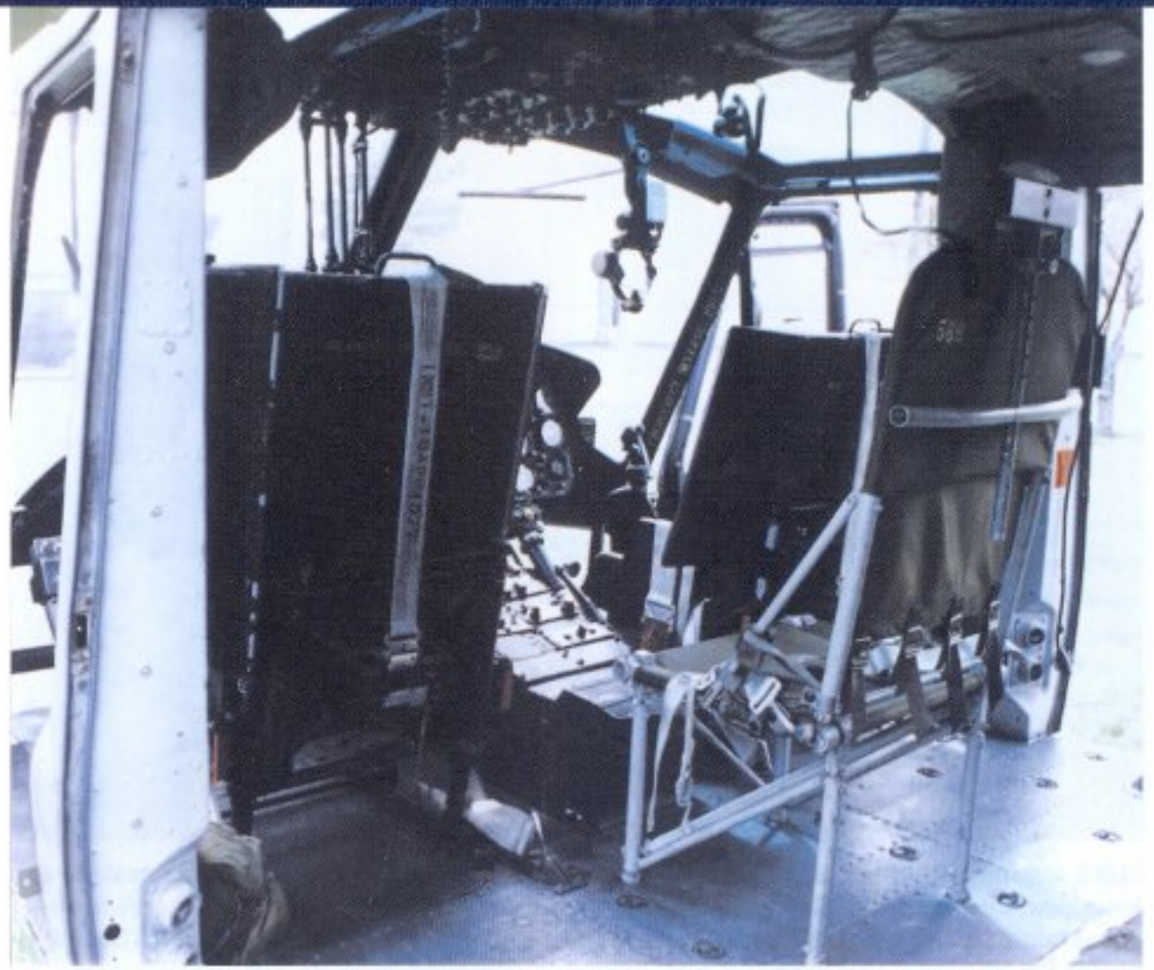
This same 'Heavy Hog' configured UH-1C is parked between test flights. The ammunition feed chute for the grenade launcher was offset to the left on the nose avionics panel. The upper nose was painted Flat Black on all US Army Hueys as an anti-glare panel. Bell produced 749 UH-1Cs from June of 1965 until 1967. (Bell)

This UH-1C had the three-section particle separator engine intake, which was introduced in 1967. Foam inserts in the unit could be removed for cleaning. Experience in Vietnam prompted development of this particle separator. A canvas cover is fitted over the exhaust to prevent Foreign Object Damage (FOD) from entering this orifice. (Lennart Lundh)

(Above Left) This beautifully preserved UH-1M (66-15193) is displayed at Tobyhanna Army Depot, Pennsylvania. It memorializes the gunship when it served as 'Bandit 3' of the 'Bandits,' the Gun Platoon of the 118th AHC at Bien Hoa. This UH-1M flew more than 2000 combat hours with four units in Vietnam. The Platoon's insignia is painted on the cockpit door. Colored roof bands – orange on this aircraft – were a means of identifying Army Huey units in Vietnam. A white diamond with a yellow center on the tail boom denoted the 118th AHC. (Frank Zardecki)

(Above) This UH-1M's cockpit was painted black for compatibility with Night Vision Goggles (NVGs). Most Huey gunship cockpits were painted the same Dark Gull Gray as the main cabin. The main cabin retained the Dark Gull Gray finish that was standard for Huey interiors. This Huey is armed with a 7.62mm M-134 Minigun and a 2.75-inch (70mm) XM-158 seven-round rocket launcher on each side. Ammunition for the Minigun was supplied from a magazine mounted under the seat in the main cabin. (Frank Zardecki)

(Left) The collective stick is mounted to the left of each pilot's seat. The throttle is mounted near the top of this stick, immediately below the engine controls. A black vinyl dust boot is located at the collective stick's base; some Hueys had this boot in gray. A cockpit entry step was incorporated into the upturned skid. A seat for the crew chief and door gunner is located immediately aft of the center console. (Frank Zardecki)



(Above) Multiple fittings recessed in the Huey's cabin deck allowed various seating arrangements. A bench seat is fitted immediately aft of the center radio console. The instructor pilot occupied this seat during a training mission. The XM-60 reflex sight is mounted on the cockpit roof in front of the pilot's seat. Circular cabin ventilators are mounted at the doorpost base immediately above the cabin floor. (Frank Zardecki)

(Right) The XM-6 Minigun sight is suspended in its operating position in front of the co-pilot/gunner's left seat. The XM-60 reflex rocket sight is deployed for the pilot's use. The UH-1's pilot aims and fires the guns when they are in a fixed mode, while the co-pilot/gunner fires these weapons in a flexible mode. Both pilots have armored seats, which increased survivability over the battlefield. Armored 'flak' jackets pilots sometimes wore over their flight suits complemented these seats. A circular 'Grimes' utility light is attached to a coiled cord above the co-pilot's seat. (Frank Zardecki)

This UH-1 pilot studies mission notes prior to take off. The Huey cockpit offered ample room and visibility. Pilot's door frames were painted Orange-Yellow to indicate emergency exits. Armored seats were either OD or black, and seat straps were off-white. An XM-60 rocket sight was stored above the pilot's position. (Hugh Mills)

LUKE is painted in blue on the black dust cover of this UH-1C's XM-156 universal mount. A support brace runs from the mount's aft section to the rear fuselage. Locally made sheet metal wind baffles were commonly attached to forward cabin door openings. These baffles reduced wind turbulence to which door gunners were subjected. (Rob Mignard)

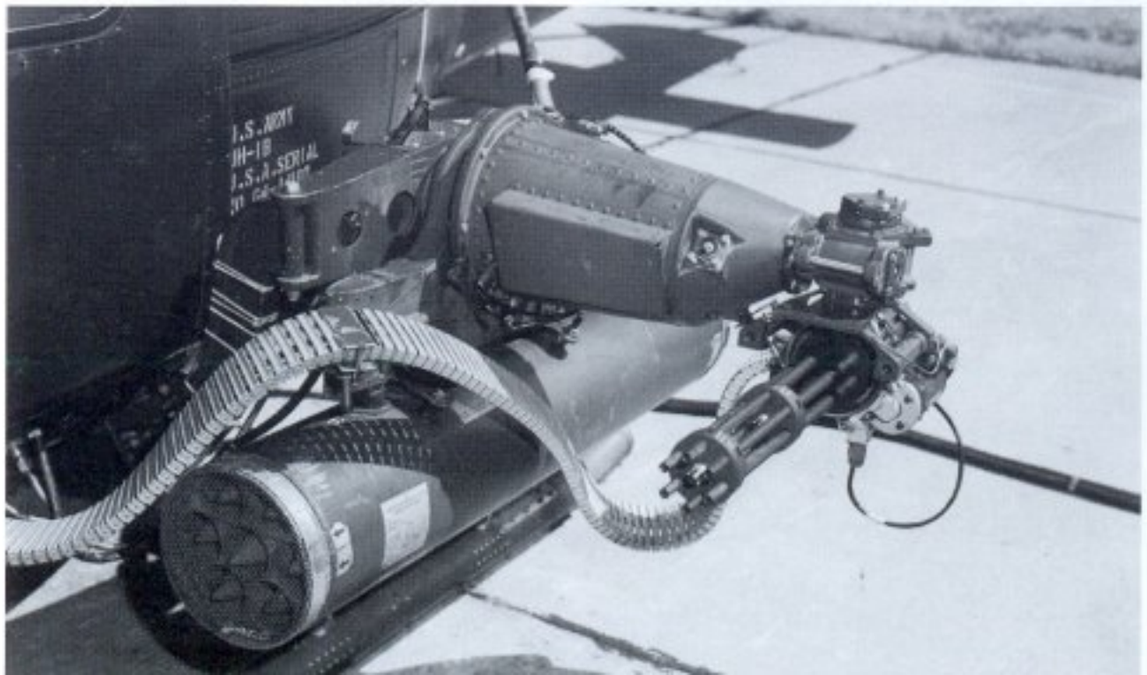
This UH-1C was assigned to the 'Sidewinders,' the Gun Platoon of the 117th AHC at Kontum, South Vietnam in 1967. A pink snake is painted on the nose between SIDE WINDERS and 117th GUNS in white. The Huey is armed with the XM-21 2.75-inch rocket system and M60s on 'Sagami' mounts. (Michael W. Bedwell)

This UH-1C operated with the Air Cavalry Troop of the 11th Armored Cavalry Regiment (ACR) in Vietnam in July of 1968. The Huey's 'Frog' configuration is comprised of the XM-5 grenade launcher and the XM-158 rocket launchers. The crew chief's M60 had a 'brass bag' attached to the breech for catching expended links and cartridges. (John Griffith)

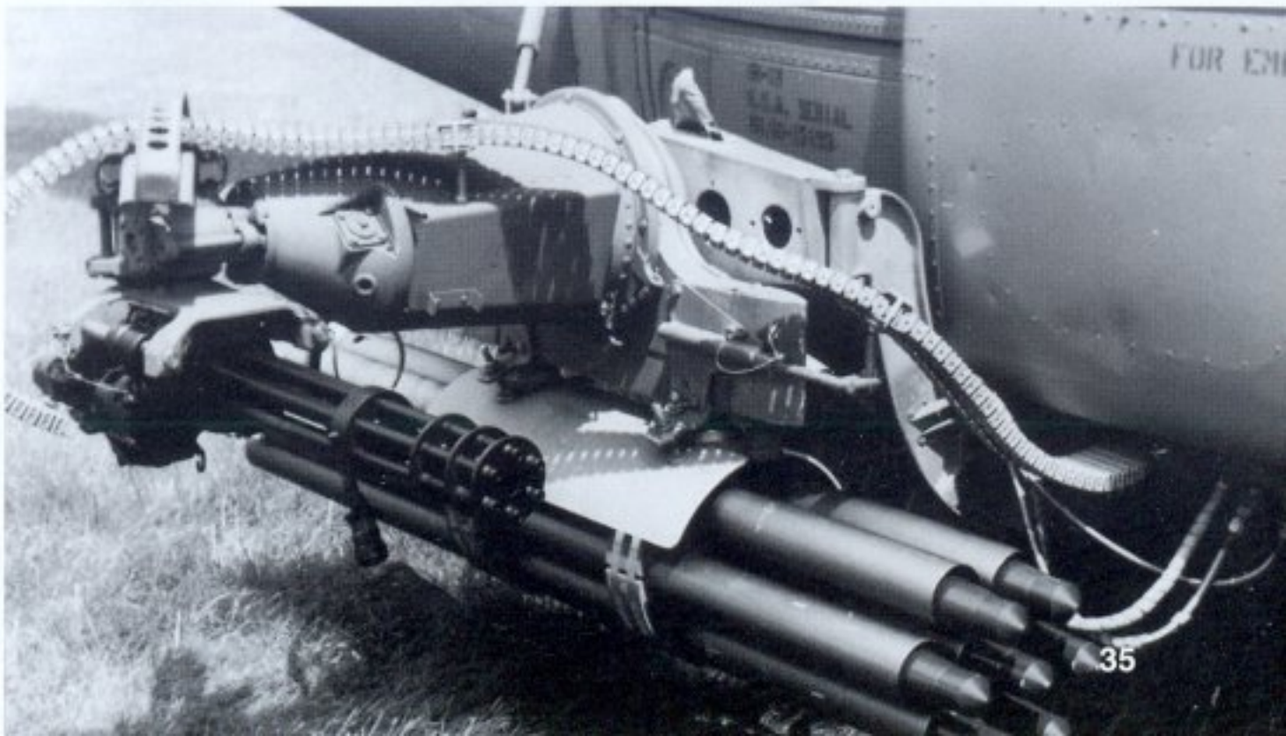
Non-standard yellow (approximately FS33655) soundproofing is fitted to the main cabin of this UH-1C. The 'VI' applied to the parking apron suggests it was flown by a unit commander. The blue diamond on the cockpit door indicated D Company, 229th Assault Helicopter Battalion 1st Cavalry Division (Airmobile). The Huey is armed with the XM-21 system. (Morris Miller)

In December of 1971, this UH-1M (65-9533) of the 176th AHC was believed to be the last 'Heavy Hog' configured Huey in Vietnam. A wind baffle was attached to the upper half of the cabin doorway. MUSKETS – the Gun Platoon's name – is red on the nose anti-glare panel. The tail boom band is white/red/white. (Craig Thoricht)

The XM-21 system consisted of 7.62MM M-134 Miniguns and 2.75-inch XM-157 seven-round rocket launchers. The launcher is attached to the narrow rack, which was sandwiched between the XM-156 universal mount and the Minigun mount. A mesh screen for keeping out Foreign Object Damage (FOD) is fitted over the front end of this XM-157 training model, whose rockets were not fired. This screen was not standard for operational XM-157s. The ammunition feed chute curves over the XM-157 to the M-134's breech. (Bell)



The earlier XM-158 rocket launcher had exposed tubes held together by a 'hardback' and straps. Its tubes varied in color from brass tone (here) to dark gray and metallic maroon. An M-134 Minigun is mounted on the outboard section of the XM-156 universal mount. (Frank Zardecki)



A UH-1C (189/66-15213) of the 'Avengers' Gun Platoon, 189th AHC departs Camp Holloway, Pleiku, South Vietnam in February of 1968. An Orange-Yellow Roman numeral VI is painted on the vertical stabilizer. In mid-1967, the US Army ordered that a 36-inch (91.4 cm) white band be painted on the upper surface of Huey rotors for improved visibility from above. One year later, this was changed to painting the entire upper surface of one blade white, and the other one black. Several other Hueys are parked in revetments, which offered some protection from Viet Cong (VC) attacks. BIKINI BEACH is painted on the sign in the background. (John B. Hyde)

This UH-1C (66-635) was assigned to the Army Aviation School at Fort Rucker, Alabama in 1967; Fluorescent Red-Orange panels on the nose and upper fuselage and tailboom were standard for training Hueys. The 'buzz number' (0635) is Orange-Yellow on the nose. UH-1s assigned to stateside training units tended to be cleaner than those flying with combat units 'in country.' It was armed with the XM-16 system, which consisted of two flex-mounted 7.62mm M60C machine guns and a one seven-round 2.75-inch rocket launcher on either side. (Charles B. Mayer)

This National Guard UH-1M has the 40MM XM-5 grenade launcher and universal mounts in 1983. A circular Army National Guard insignia is painted on the cockpit door. The XM-5 turret slewed 60° to left or right and had an elevation range of +13° to -60°. This grenade launcher had a firing rate of 240 rounds per minute and a range of 1312 yards (1200 M). (Terry Love)

An enterprising 176th AHC crew chief chrome-plated portions of this Huey's M-134 Minigun. This was a definitely non-standard modification. The 176th was based at Phu Hiep, South Vietnam in 1971. (Craig Thoricht)

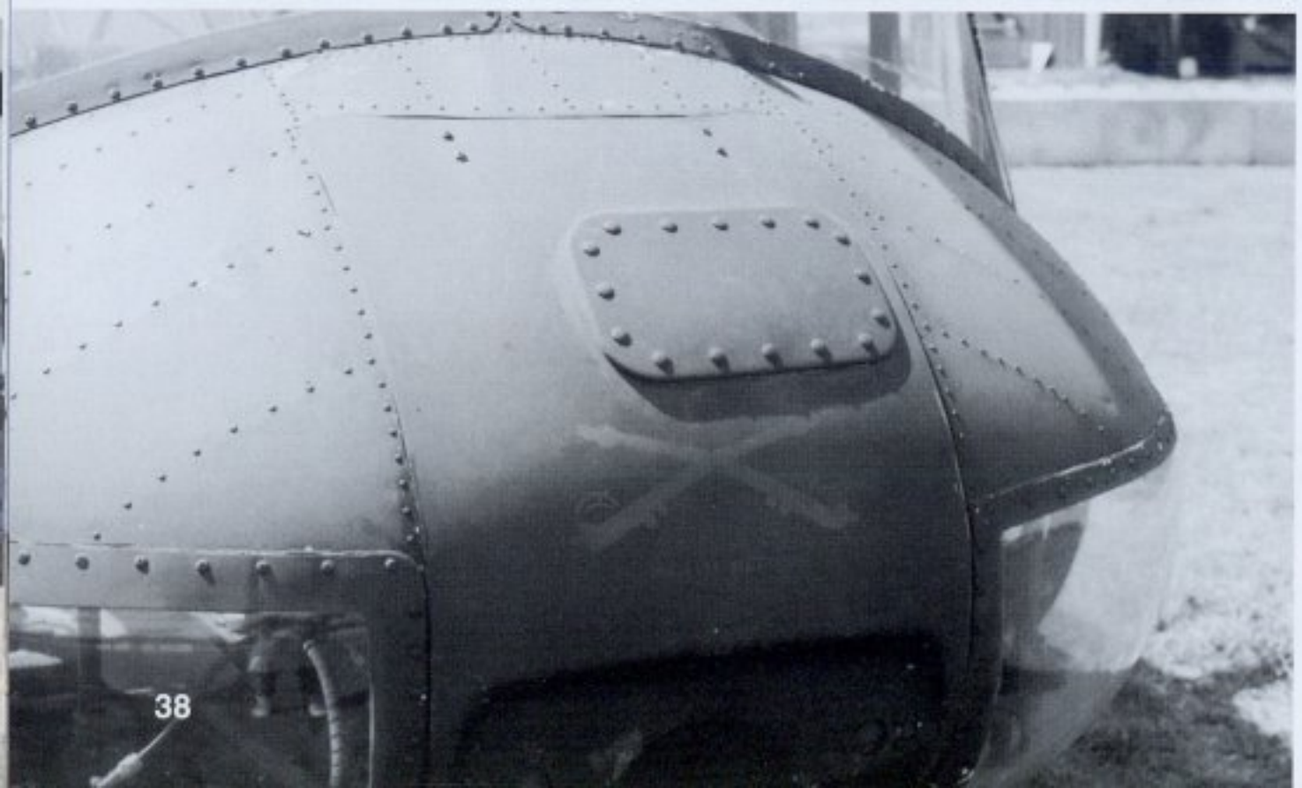
Following the Vietnam War, a large number of Huey gunships went to National Guard units. This UH-1M (66-0709) was assigned to Company A, 47th Aviation Battalion, Wisconsin Army National Guard (ARNG) at Truax Field, Madison, Wisconsin. (Terry Love)

Engine and transmission cowlings are opened on this UH-1M (64-14119). The 1st Battalion, 183rd Aviation Regiment, Idaho ARNG flew this aircraft from Gowen Field Air National Guard Base (ANGB)/Boise Air Terminal. The Huey was repainted in the overall Helo Drab (FS34031) scheme adopted by US Army helicopters after the Vietnam War. (Lennart Lundh)

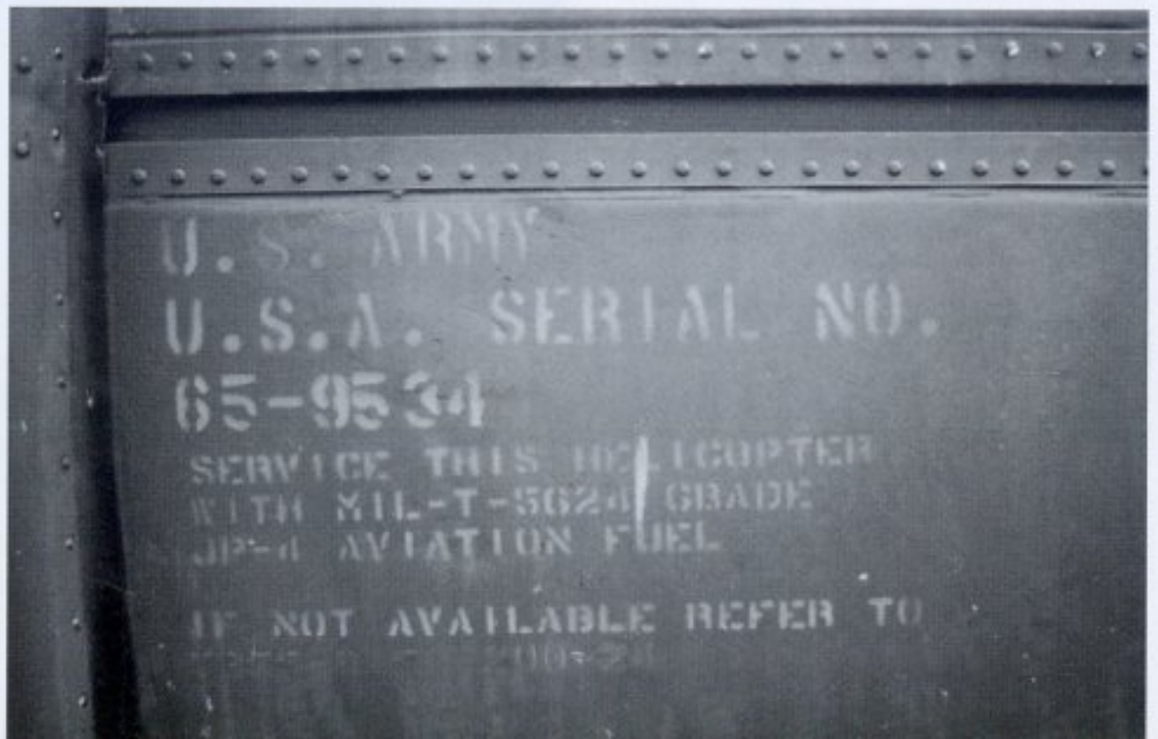
The XM-158 rocket launcher system is mounted on this 176th AHC UH-1C in 1971. Each of the seven rocket tubes were removable for maintenance. A large wind baffle was added to the cabin doorpost. This baffle remained in natural metal, with no effort made to paint it Olive Drab (OD; FS34087) to match the airframe. (Craig Thoricht)

Chrome-plated components are part of the M-134 Minigun on this 176th AHC Huey. The ammunition chute winds from the fuselage under the main cabin door to the weapon's breech. An XM-158 rocket launcher is mounted inboard of the M-134. (Craig Thoricht)

The modified nose avionics panel easily identified Hueys adapted for the XM-5 grenade launcher system. An offset rectangular cover is bolted over the chute opening, while an indentation on the lower nose indicated where the launcher was mounted. Dark gray crossed sabres are painted on the nose below the chute opening cover. (Lennart Lundh)



Most data block lettering was applied to Hueys in decal form; however, this data block was stenciled. This UH-1C's data appeared below the upper channel for the cabin door. The serial number's first two digits (65-9534) indicated the fiscal year (1965) this aircraft was ordered, while the rest of the number was the sequence within that fiscal year. (Author)



The US Army liberally used geometric symbols to identify air units throughout most of the Vietnam War. The white pentagon with orange diagonal stripe on this UH-1C's tail boom identified the 214th Aviation Battalion in October of 1967. An XM-5 grenade launcher is mounted on the nose. (Terry Love)

This UH-1C (66-679) was assigned to the 92nd AHC at Dong Ba Thin, South Vietnam. A Black 92 is painted on the cockpit door and the aft tailboom is White. This Huey is armed with 19-tube 2.75-inch XM-200 rocket launchers. (Rob Mignard)

A plainly marked UH-1C flies with a pair of XM-159 rocket launchers at Ban Me Thuot, South Vietnam in March of 1968. This Huey lacked the special markings normally used by gunship units in Vietnam. The crewman in the main cabin wears a White flight helmet, instead of the Olive Drab helmet usually worn by Army flight crews. (Robert Steinbrunn)

A UH-1C (66-567) assigned to the 57th AHC hover taxies at Phu Cat AB, South Vietnam in late 1970. (A helicopter performs a 'hover taxi' when in low level flight within ground control.) This helicopter is armed with the XM-21 system: two 7.62MM M-134 Miniguns and a pair of 2.75-inch XM-158 rocket launchers. The aircraft's number (57) is Black on the cockpit door, while the tail band is (from front) Red, White, and Blue. White stars are painted on the Blue aft tailboom section. (Norm Taylor)

The XM-22 missile system used six General Electric AGM-22B missiles. The AGM-22B was the US designation for the French Nord-Aviation (now Aérospatiale) SS.11B1, which General Electric built under license. The US Army purchased the first SS.11s from France in 1959 and approved them for use on the UH-1B in 1961. The AGM-22B was 47 inches (119.4 CM) long, with a diameter of 6.5 inches (16.5 CM) and a wingspan of 19.5 inches (49.5 CM). It weighed 66 pounds (29.9 KG), including the 15-pound (6.8 KG) anti-armor warhead. A two-stage (boost/sustain) solid-fuel rocket powered the missile to a speed of 425 MPH (684 KMH) and a range of 9800 feet (2987 M). Although the wire-guided XM-22 was highly effective, only 32 systems went to Vietnam. The pilot had a sight to aim the aircraft, while the co-pilot had a sight for flying the missile by wire to the target. This UH-1B carried the original XM-22 system, which was a modification of the XM-3 24-round rocket launcher system mount. (Bell)

Although the XM-22 system saw little use in Vietnam, several National Guard Huey units inherited the missile system. This UH-1B (63-8538) of the New Jersey ARNG shows how the missile booms were adapted to the XM-156 universal mount. The Huey was assigned to Headquarters Troop, 117th Cavalry Regiment at Dover, New Jersey. (Terry Love)

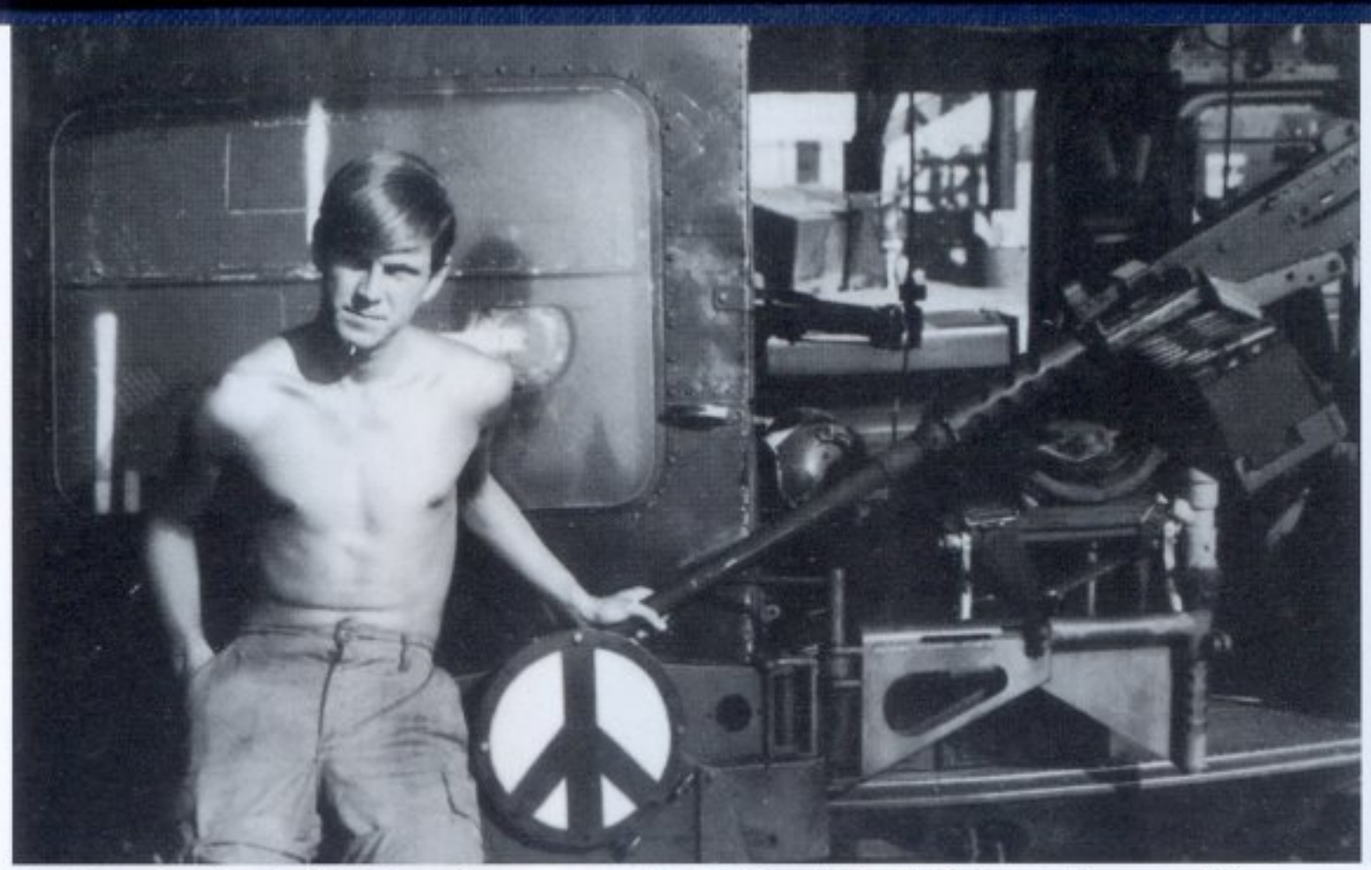
The 'Maxwell System' was a hybrid missile/rocket arrangement. It combined an 18-round 2.75-inch XM-3 rocket launcher with an AGM-22B missile. The latter item was fitted to a reinforced outer tier of an XM-3. The 'Maxwell System' gave Huey gunships of the 2nd Squadron, 20th Aerial Rocket Artillery (ARA) Regiment a point-target (accurate ordnance placement) rocket capability. This unit was assigned to the 1st Calvary Division (Airmobile). (Author's Collection)

The XM-22 system was first tested on an HU-1A in March of 1960, but didn't see combat in Vietnam until October of 1965. An operational AGM-22B missile, which had a range of 3281 yards (3000 M), was Olive Drab (OD) with a Orange-Yellow nose. Practice missiles – mounted on this New Jersey ARNG Huey (63-8538) – were a light blue (approximately FS35250). Missile pylons were painted Light Ghost Gray (FS36375). (Terry Love)

This UH-1B of the 2nd Squadron, 4th Cavalry Regiment was armed with AGM-22B missiles in 1977. The Regiment was assigned to the 24th Infantry Division (Mechanized) at Fort Stewart, Georgia. The Huey's Black, Tan and OD camouflage is reminiscent of schemes used on Army aircraft early in the Vietnam War. (Author's Collection)

(Above) To control Vietnam's Mekong Delta and Rung Sat Special Zone, the US Navy established Helicopter Attack Squadron (Light) Three (HA(L)-3) 'Seawolves' in 1967. The unit provided the Navy with its first attack helicopter experience. Eventually, the 'Seawolves' operated more than 20 UH-1B, C, and M model gunships, all of which were loaned from the US Army. The Navy Huey gunships sported a wide variety of weapon combinations. This rocket-armed UH-1B, which had a UH-1C tail boom with B model synchronized elevators, was one of two assigned to the unpowered barge USS YRBM-21 on the Mekong River. This Yard Repair, Berthing, and Messing (YRBM) barge supported Patrol Boats, River (PBRs) and monitors operating on the Mekong. (John Broadway)

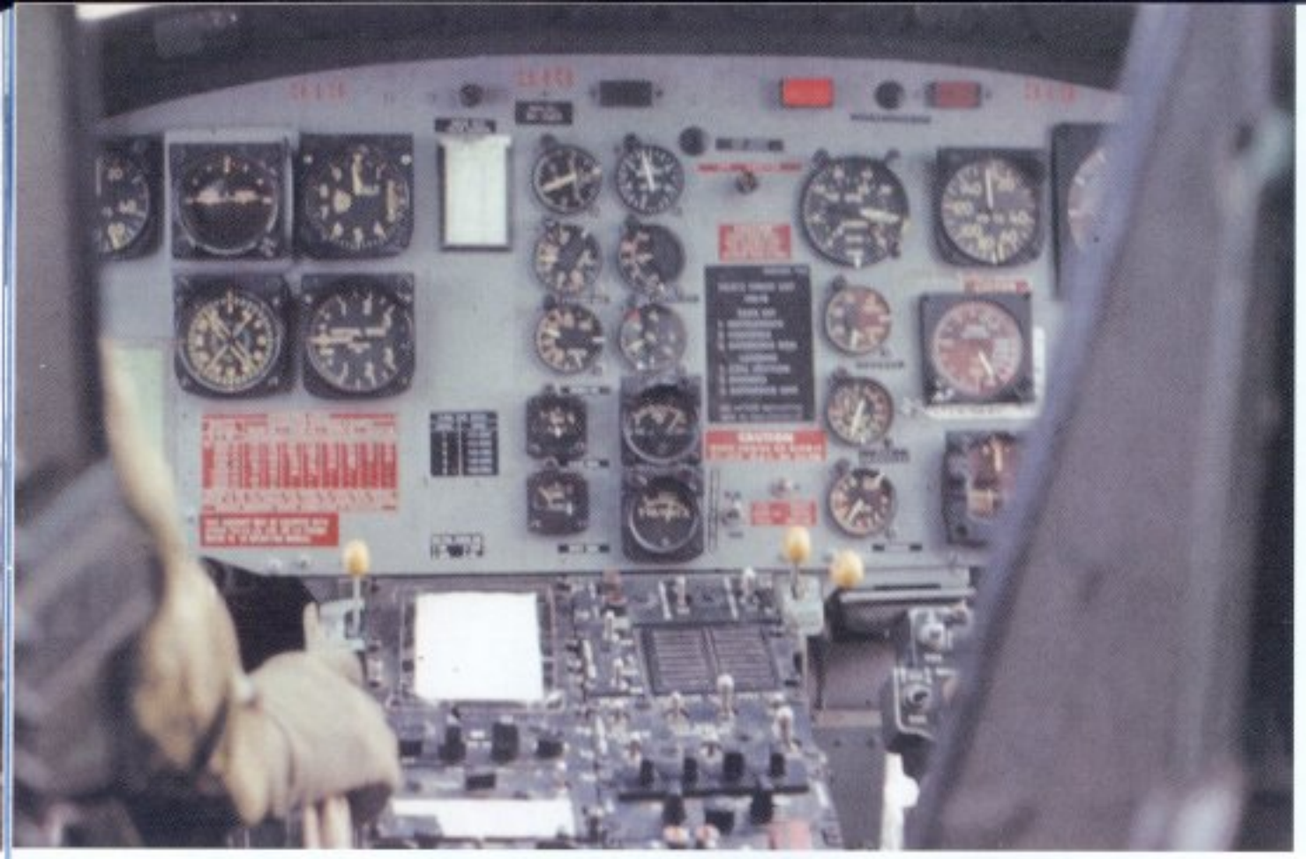
(Left) This UH-1C was assigned to Detachment 2 of HA(L)-3 at Nha Be, Vietnam. The Squadron operated seven detachments throughout the Mekong Delta. The Huey engaged the enemy with seven-round 2.75-inch (70MM) XM-158 rocket launchers and crew-operated 7.62MM XM-93 (GAU-2B/A) Miniguns. These machine guns had a firing rate of 2000 to 4000 rounds per minute (RPM). This Huey's starboard Minigun was named The Judge. A large screen attached with braces aft of this weapon deflected spent links and cartridges so they wouldn't damage the tail rotor. This UH-1C was overall Olive Drab (OD; FS34087), with flat Insignia White (FS37875) NAVY titles on the tail booms. (Henry E. Livingstone)



The 'Seawolves' made liberal use of crew-operated .50 caliber (12.7MM) M2HB machine guns. This weapon is fitted on a 'Sagami' mount in the starboard doorway. A 7.62MM M60D machine gun occupied the opposite doorway. The then-popular peace symbol adorned the XM-156's universal mount's dust cover. (Henry E. Livingstone)

Like their Army counterparts, Navy gunship crewmen operated M60A and M60D machine guns on both 'Sagami' and pintle post mounts. This M60D retained its folding bipod and carrying handle in the event the Huey crashed. The wind baffle on the doorpost was also an Army carryover. (Henry E. Livingstone)

A pintel-mounted .50 caliber M2HB machine gun is carried by a HA(L)-3 UH-1B. This weapon had an overall length of 65.1 inches (165.4 CM), a barrel length of 45 inches (114.3 CM), and a weight of 84 pounds (38.1 KG). A 110-round belt with metallic links fed the gun. The M2HB had a muzzle velocity of 2950 feet (899 M) per second and a cyclic firing rate of 500 RPM. The universal mount does not have the dust cover attached. A seven-tube XM-158 rocket launcher is mounted on the XM-156 universal mount. (John Broadway)



The instrument panel of a HA(L)-3 UH-1B is primarily Dark Gull Gray (FS36231). The aircraft's call sign (313) is stenciled in red along the panel's top section. Instrument bezels and the center console are flat Black. (Henry E. Livingstone)

The 'Seawolves' applied their emblem, and variations, to the noses of their gunships. A rectangular metal patch is visible above the UH-1B's pitot tube; however, its exact purpose is unknown. (John Broadway)

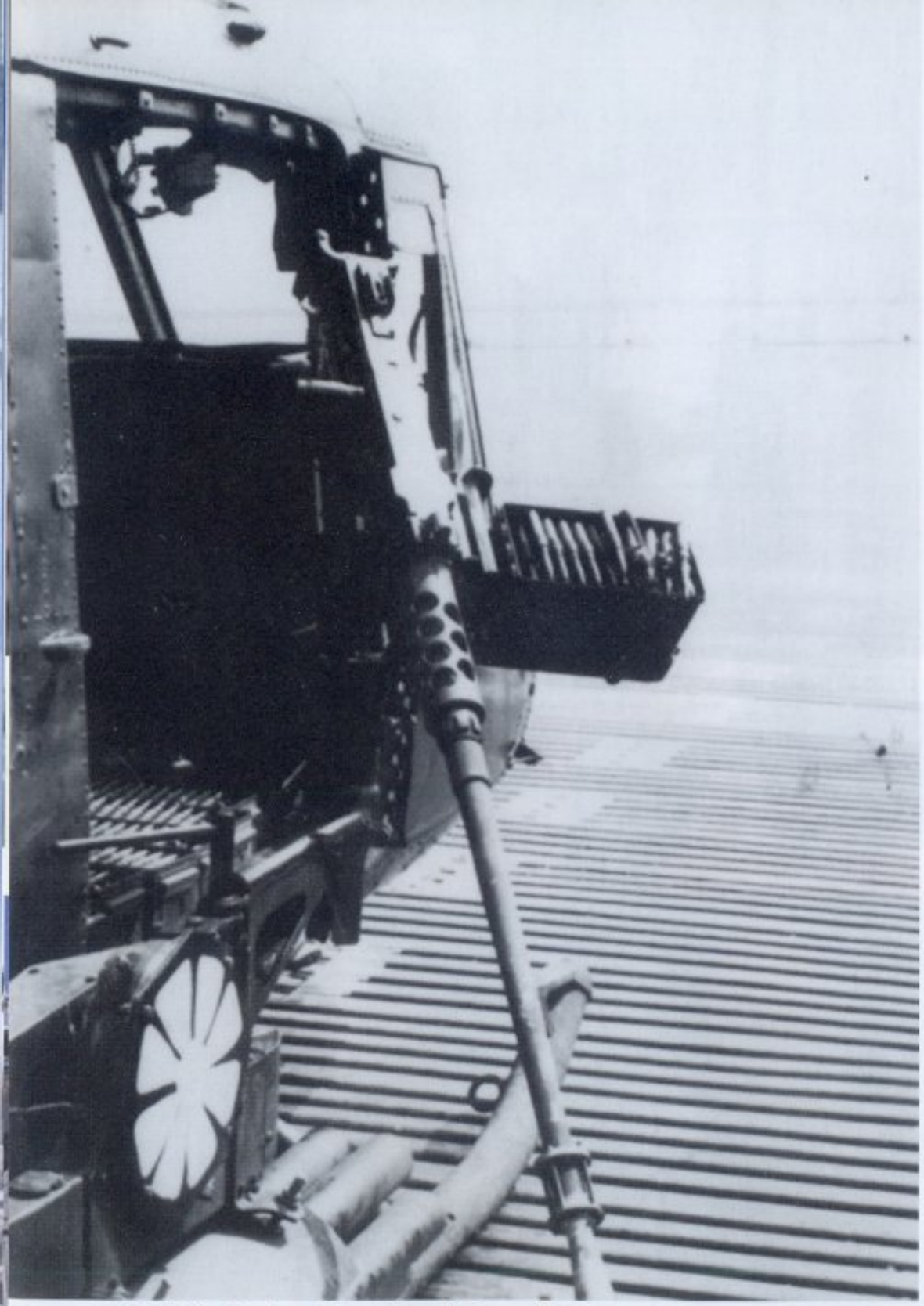
A HA(L)-3 UH-1B equipped with the XM-21 armament system hovers over a YRBM's deck. Doors were seldom used on these Hueys allowing for quick escape in an emergency. Crewmembers wore orange life jackets due to the amount of time they spent over water. (Henry E. Livingstone)

HA(L)-3 crewmen placed no limits on equipment, as evidenced by the air horns and siren attached to the nose of this UH-1B. An XM-60 rocket sight was stowed above the pilot's position. This aircraft retained the cockpit doors. (Henry E. Livingstone)

(Above) The siren and air horns on the nose of this 'Seawolves' Huey had a profound psychological affect on the enemy. This crewman wears the 'tiger stripe' camouflage usually associated with US Special Operations Forces (SOFs) in Southeast Asia. HA(L)-3 supported Navy Sea, Air, and Land (SEAL) teams on their clandestine missions against Viet Cong and North Vietnamese forces in the Mekong Delta. (Henry E. Livingstone)

(Above Right) This .50 caliber M2HB machine gun was modified for use aboard a 'Seawolves' UH-1 gunship. The small 110-round ammunition box attached to its feed mechanism was replenished from crates stored in the cabin. (Henry E. Livingstone)

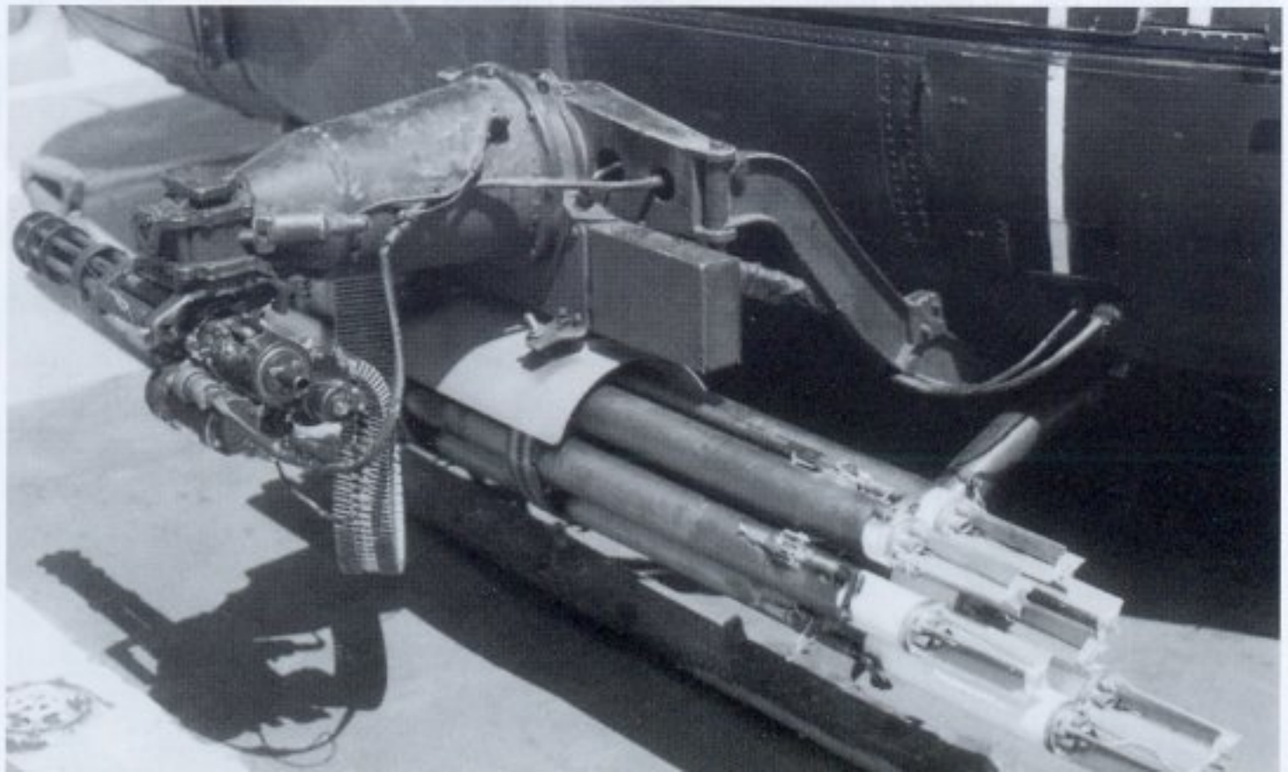
(Right) This highly modified hand-operated 7.62MM M-134 Minigun illustrates the extent to which HA(L)-3 experimented with weapons systems. The makeshift mount incorporated 'spade' hand grips borrowed from the M60D machine gun. A sheet metal wind baffle is mounted on the doorpost ahead of the cabin opening. (Henry E. Livingstone)



An M2 is fitted to the starboard 'Sagami' mount of this Det. 2, HA(L)-3 UH-1 based at Nha Be in 1969. A flower sticker adorned the universal mount's dust cover. At least three additional 110-round ammunition boxes are placed on the cabin floor, within the gunner's easy reach. The pilot's reflex gun sight is folded to the left. (Henry E. Livingstone)

A stripped down M60 was attached to the 'Sagami' mount of this 'Seawolves' gunship. Ammunition was fed from the large box under the crewman's legs. A quick-release pin allowed the gunner to use the lightweight gun on the ground following a crash. These Hueys had two gunners – one of whom was also the crew chief – in the main cabin, behind the two pilots. (Henry E. Livingstone)

Folding Fin Aircraft Rockets (FFARs) protrude from the XM-158 launcher of a 'Seawolves' UH-1B. Four fins extended from the FFAR's rear upon launch to help stabilize the rocket on its flight towards the target. The XM-21 system (the XM-158 with the XM-134 Minigun) became a favorite with Navy gunship crews. (Henry E. Livingstone)



The US Marine Corps (USMC) was – like the US Army – an early Huey operator. The Marine UH-1E was built in two distinct versions patterned after the UH-1B and UH-1C. The 'Echo' models differed in that they were of aluminum construction, which tolerated water environments better than the Army Hueys' magnesium components. The UH-1E also had additional avionics, a rotor brake to immediately stop the main rotor on engine shutdown, and a roof-mounted 600-pound (272 KG) capacity rescue hoist. One of the first UH-1Es was this aircraft assigned to Helicopter Development Squadron One (HMX-1) at Marine Corps Air Station (MCAS) Quantico, Virginia. Its unusual mix of weapons included a Temporary Kit Two (TK-2) fire suppression package, which fitted platforms to both fuselage sides. This Huey's TK-2 is fitted with fixed quad 7.62MM M60C machine guns and an XM-18 Minigun pod. The Huey was painted overall flat Field Green (FS34095), with glossy Orange-Yellow (FS13538) tail band and Insignia White markings. A gold USMC emblem was attached to the doorpost. (US Marine Corps)

UH-1B/C/E Colors

Glossy Olive Drab (early Army):	FS14087
Flat Olive Drab (later Army and Navy):	FS34087
Flat Black:	FS37038
Glossy Orange-Yellow:	FS13538
Flat Orange-Yellow:	FS33538
Flat Field Green (Marine):	FS34095
Glossy Insignia White:	FS17875
Flat Insignia Red:	FS31136
Flat Insignia White:	FS37875

This UH-1E (13/BuNo. 151292) was among the first batch of 34 'Echos' delivered to the Marine Corps. It is parked on the flight line at Da Nang, South Vietnam. The Huey is armed with 19-tube 2.75-inch rocket launchers and M60Cs. USMC helicopters used glossy Insignia White rocket launchers employed by Marine fixed-wing aircraft, which had Insignia White undersurfaces. Crewmen fired M60As from the cabin. MARINES is painted in flat Black on the tail boom. 'High Line' High Frequency (HF) radio antennas were usually mounted along the tail booms of Marine Hueys. (US Marine Corps)

(Above Left) The UH-1E was essentially a UH-1B modified to meet USMC requirements. Early Marine Hueys had high visibility markings on their overall Field Green finish. Full color national insignias were painted on the tail booms, upper fuselage, and lower fuselage. A flat Black anti-glare panel was painted on the upper nose. The UH-1E's antenna configuration was noticeably different from its Army counterpart, due to the different radios installed on Marine aircraft. (Bell)

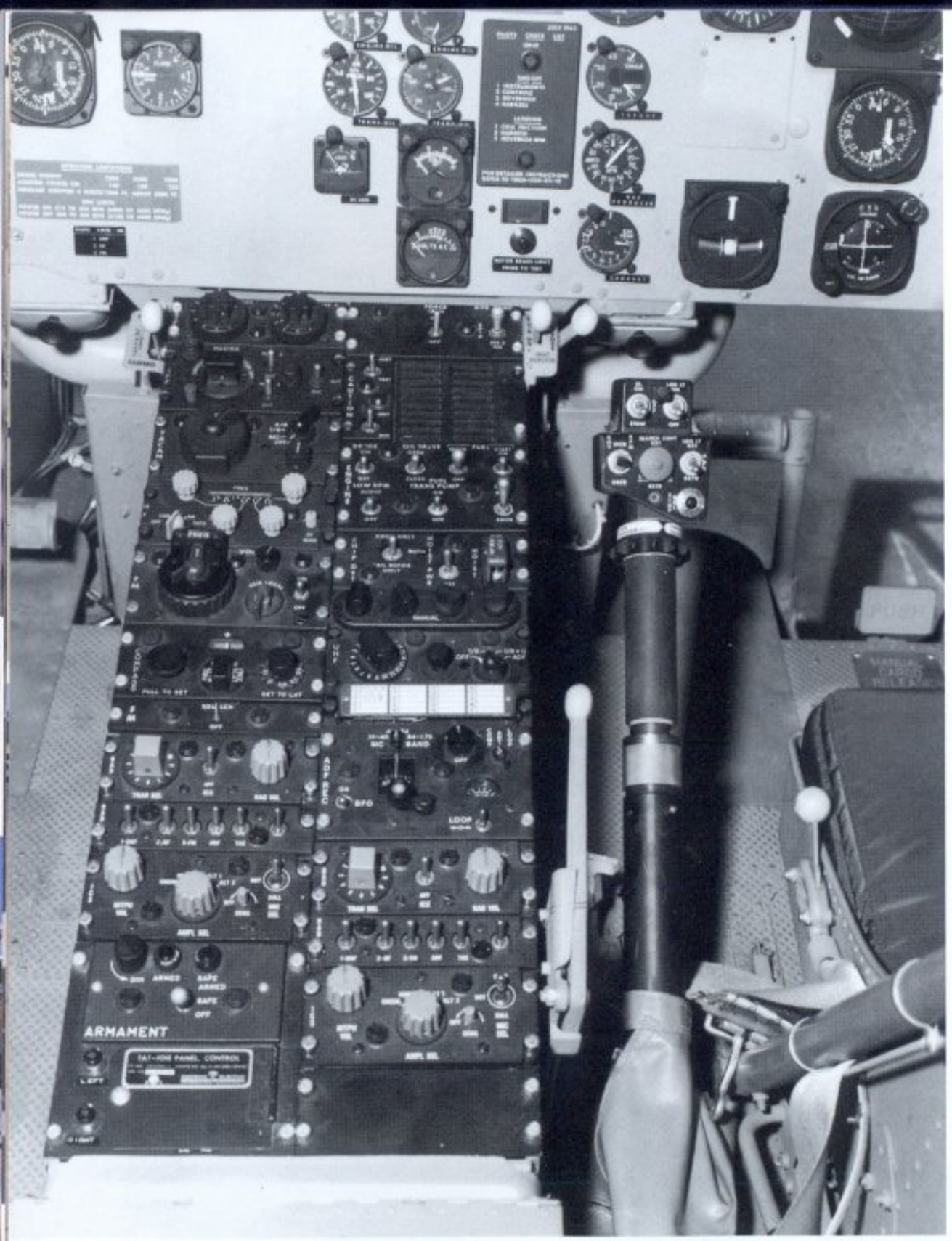
(Above) Marine UH-1Es had HF antennas strung along both sides of the tail boom. This 'High Line' antenna improved radio reception over a smaller antenna mast on the airframe. A 4000-pound (1814 KG) capacity cargo hook is retracted in the 'hell hole.' This hook is extended when the Huey is carrying slung loads, including light surface vehicles and other cargo. The square device immediately aft of the forward skid cross tube is a Tactical Air Navigation (TACAN) antenna. Radio signals are sent between the TACAN antenna and ground stations. These signals give the aircraft its bearing and distance from pre-determined positions on the ground along the flight path. (Bell)

(Left) The second UH-1E built (BuNo 151267) sits on the ramp at Bell's Hurst, Texas factory. Armored crew seats replaced bucket-type pilot seats fitted to this Huey during UH-1E production. Green-tinted windows in the cabin roof reduced glare and prevented vertigo from the spinning rotor blades. The dome on the cabin roof housed the cable and motor for the 600-pound capacity rescue hoist. A Bell 47 helicopter is parked on the ramp behind the UH-1E, with a new UH-1D on inflatable floats immediately aft of the Bell 47. (Bell)

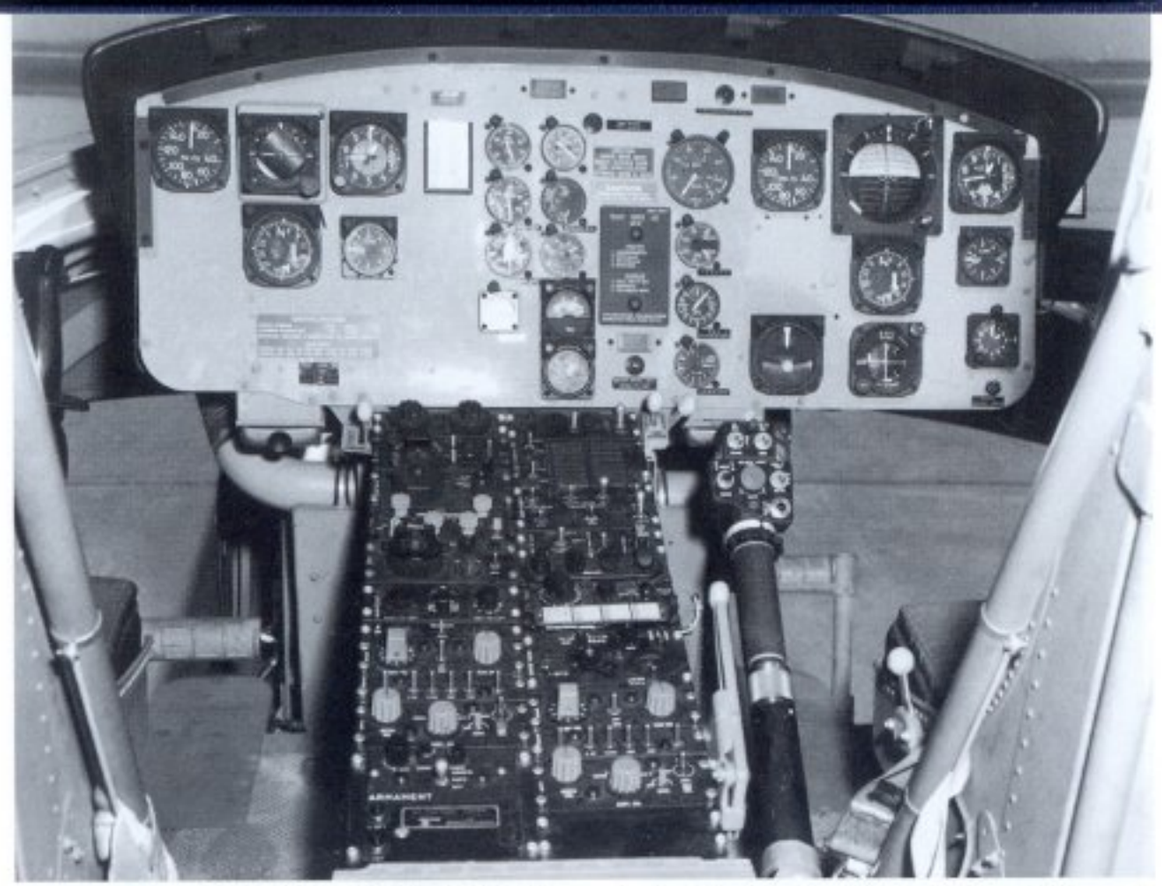
Maintenance crews perform an engine change on a Vietnam-based UH-1E (WB/BuNo 151864) in July of 1966. This demonstrated the Huey's ease of maintenance in the field. The Huey was assigned to Marine Observation Squadron Six (VMO-6), which deployed from MCAS El Toro, California to Chu Lai, South Vietnam in January of 1965. The Squadron's Hueys arrived 'in country' the next year. (Ed Alexander)

A Marine crew performs engine, transmission, and main rotor maintenance on an UH-1E in Vietnam. The fuel filler cap is located high on the fuselage, immediately below the opened cowl. This feature was carried over from the Army's UH-1C; however, the UH-1E retained the UH-1B's main rotorhead. A rotorbrake fitted to the main transmission immediately halted the main rotor after the engine had stopped. (Ed Alexander)

A UH-1E (11/BuNo 15184x) is parked at Marble Mountain Air Facility, near Da Nang, South Vietnam. This base hosted Marine Air Group Sixteen (MAG-16), which administered the VMOs deployed to South Vietnam. The UH-1E is fitted with the TK-2, to which seven-tube 2.75-inch (70MM) rocket launchers are fitted. This kit was an improved version of the TK-1, which was intended to transform the reliable Sikorsky UH-34D Seahorse into a gunship. Shortly after UH-1Es arrived in Vietnam in 1966, high visibility markings gave way to an overall subdued Field Green scheme with Black markings. The serial number's last digit on the aft tail boom is obscured. (Bell)



The UH-1E's center console differed in several details from those on Army UH-1A/B/C aircraft. This was due to the different radios fitted to the 'Echo,' which allowed this variant to communicate with both Marine aircraft and ground troops. The light gray lever to the right of the console jettisoned all external stores. This measure was performed in an emergency, when the pilot suddenly needed to lighten the aircraft. (Bell)

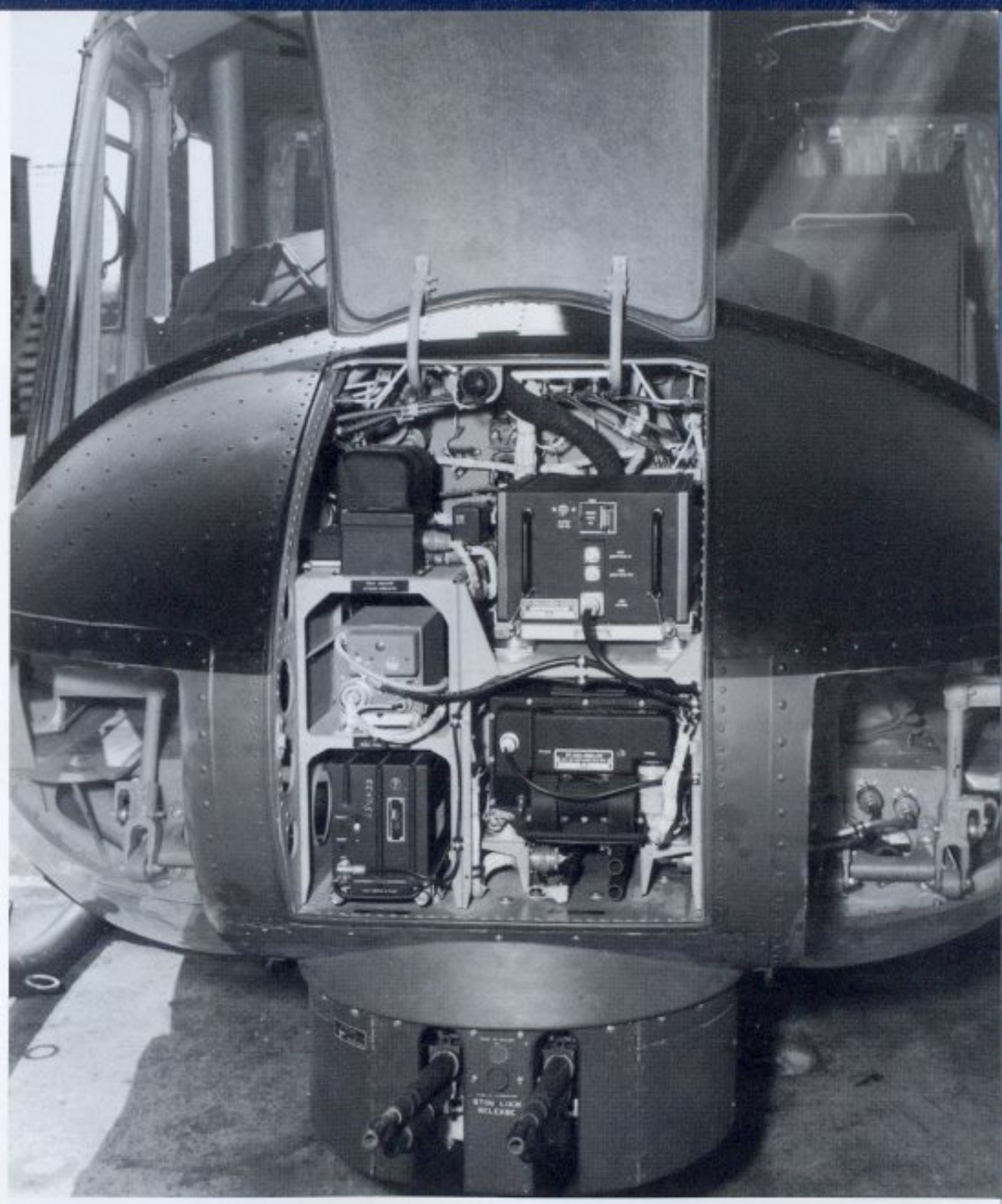


The cockpit of this UH-1E (BuNo 151874) was typical for Marine 'Echos.' The pilot's collective lever immediately right of the center console included a twist-type throttle in the lever's upper section. Most flight instruments are placed on the panel's right side, facing the pilot, but the co-pilot/gunner to left also had full flight controls. UH-1E cockpits were primarily Dark Gull Gray (FS36231) and semi-gloss Instrument Black (FS27038). (Bell)

A later model UH-1E gunship (23) supporting UH-34Ds of Marine Medium Helicopter Squadron Two Sixty Three (HMM-263) in Vietnam in October of 1967. These helicopters are preparing to depart from a beach 17 miles (27.4 KM) south of Chu Lai, South Vietnam. The Huey is armed with two 7.62MM M60Cs and a seven-tube 2.75-inch rocket launcher on each side. (US Marine Corps)

Beginning in April of 1967, UH-1Es were modified to incorporate the Emerson Electric Tactical Armament Turret 101 (TAT-101). The pilot controlled this hydraulically-powered turret, which contained two 7.62MM M60 machine guns and 1000 rounds of ammunition. The guns were slewed 100° to either left or right, while its elevation range was +15° to -45°. TAT-101s were removed from UH-1Es in favor of other armament kits by the end of 1972. (Bell)

An 'Echo' (39) assigned to Marine Light Helicopter Squadron One Sixty Seven (HML-167) is parked at Firebase Baldy, South Vietnam in 1970. The squadron removed the TAT-101 turrets from their UH-1Es by mid-1970, since they were prone to jamming. Nineteen-tube 2.75-inch rocket launchers were then carried on the TK-2 kits. HML-167 was activated at Marble Mountain on 1 April 1968. (Allyn Hinton)



The avionics compartment access hatch is opened on this UH-1E equipped with the TAT-101 turret. Placement of radio and avionics equipment in this location facilitated maintenance. The AN/ARC-44 Frequency Modulation (FM) liaison radio set is mounted in the lower right of this compartment (lower left in photo), with the AN/ARN-50 Ultra High Frequency (UHF) Automatic Direction Finder (ADF) set immediately above it. Across from the AN/ARC-44 is the AN/ARC-52 UHF transceiver, while immediately above is the AN/ARN-52(V) Tactical Air Navigation (TACAN) unit. Tail rotor directional pedals are visible through the chin bubbles. (Bell)

An HML-167 UH-1E (16) undergoes maintenance at Phu Bai, South Vietnam in 1968. Access panels covering the engine, transmission, and aft rotor shaft are opened. The aircraft number is repeated in Roman numerals on the doorpost. PATIENCE HELL is painted below the two Black buzzards on the cockpit door. (Gary Zimmerman)

Gunship crews in Vietnam covered weapons systems during the dry season. This prevented dust from fouling the systems. This HML-167 Huey had a seven-tube 2.75-inch rocket launcher on the starboard TK-2 kit. Marine UH-1Es had rocket launchers in both Field Green and Insignia White. (Gary Zimmerman)

A later UH-1E (25) assigned to HML-367 sits at Phu Bai in August of 1968. A light green and light yellow cobra is painted on the nose anti-glare panel. The US national insignia and MARINES are not painted on this Huey's tailboom. Oil drum revetments offered some protection from an enemy attack on the air base. (Gary Zimmerman)

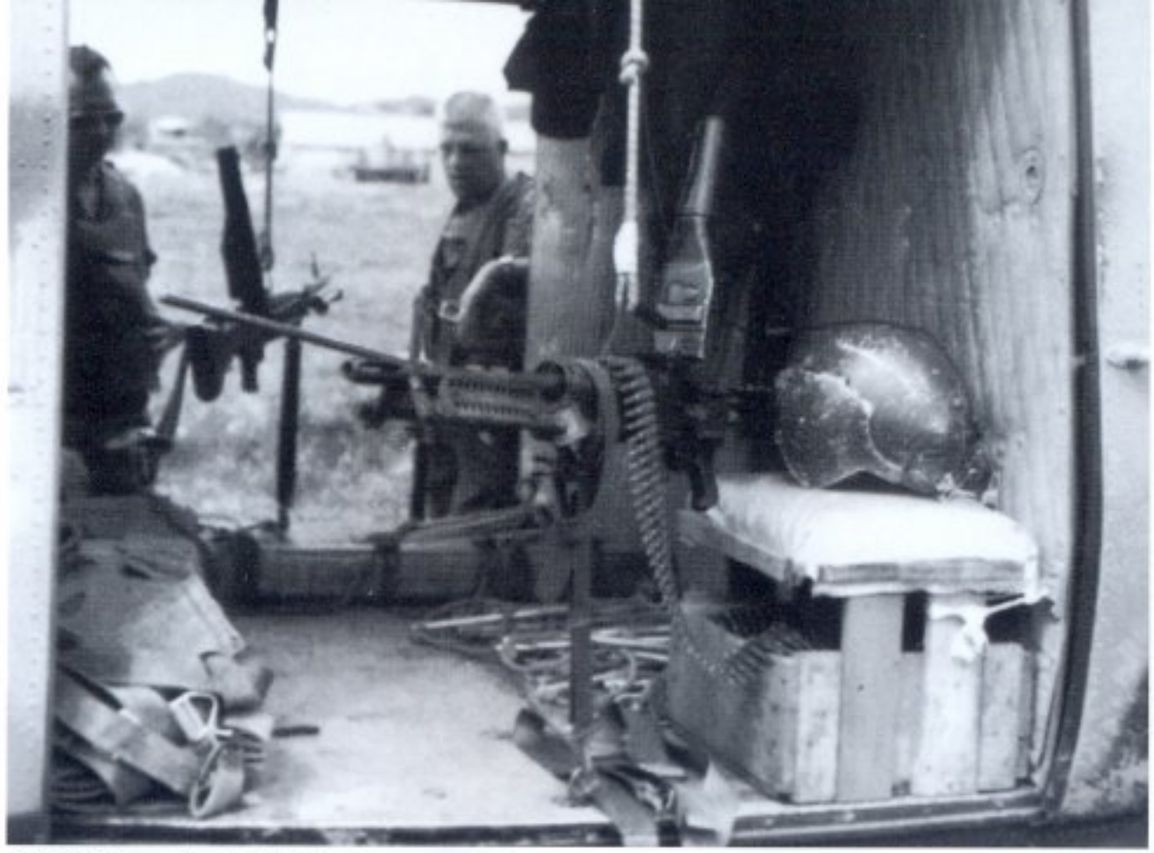
An HML-167 UH-1E lifts off from a Marine base in Vietnam. It carries a pair of 19-type 2.75-inch rocket launchers on its TK-2 kit: one launcher each to port and starboard. The Huey's roof-mounted rescue hoist was removed in the interest of saving weight. A red band is painted on the vertical stabilizer. (Larry Wagoner)

A Marine UH-1E (15/BuNo 151879) prepares to take off on a mission over South Vietnam. This 'Echo' retained the Orange-Yellow tailboom band, although the MARINES title on the tailboom was changed from White to Black. Navy Construction Battalions ('Seabees') used aluminum planks to build makeshift runways and taxiways in Vietnam during the conflict. (Bell)

A UH-1E (7) flies over other 'Echos' parked at a Marine air base in Vietnam. This Huey's gunner operated an infantry-type 7.62MM M60A machine gun on a swing-out mount. A small 200-round ammunition box was attached to the gun's feed mechanism. Additional ammunition for the door guns was stowed in the main cabin. (Bell)

A UH-1E (23) warms up its T53-L-11 engine prior to a mission. Marine Huey gunships had their cabin doors removed. This measure reduced weight while operating in the high temperatures and humidity of Vietnam. Removing the cabin doors also facilitated rapid escape for the door gunners in the event of a crash. To facilitate maintenance, crewmen found it easier to leave the front fairing off the nose-mounted TAT-101 turrets. Heavy exhaust stains have obscured the Huey's Orange-Yellow tail band. Part of the national insignia is painted on the rescue hoist fairing on the main cabin roof. (Bell)

The US Air Force (USAF) began using its UH-1F for missile site support and utility duties in 1964. Weapons mounted on the fifth production aircraft (63-13145) suggested an early interest in its use as a gunship. Bell completed 119 UH-1Fs, all of which employed the UH-1D's 48-foot (14.6 M) diameter main rotor. The UH-1D's longer tail boom was also used to provide tail rotor clearance and incorporate a baggage compartment on the right side. The most radical deviation from short-fuselage Hueys was the installation of the 1325 SHP General Electric T58-GE-3 turboshaft engine. This was the same engine that powered the Sikorsky CH-3/HH-3 helicopters already in USAF service. This UH-1F is overall glossy Blue (FS15045), with a flat Black anti-glare nose panel and an Orange-Yellow tailband. The Tactical Air Command (TAC) insignia is painted on an Orange-Yellow lightning bolt on the vertical stabilizer. (Bell)



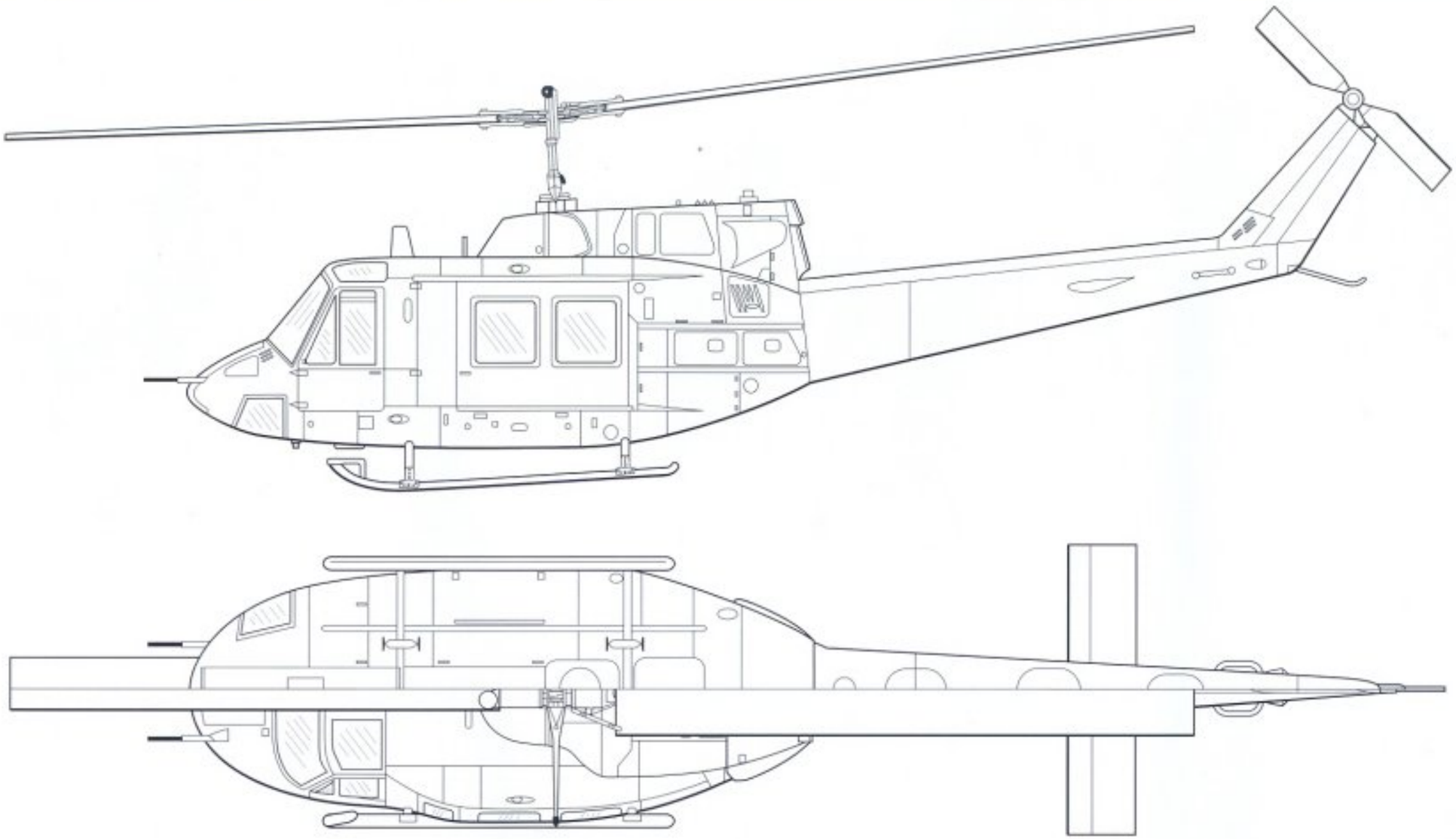
UH-1Fs from the 606th Air Commando Squadron (ACS) were used to form the 20th Special Operations Squadron (SOS) 'Green Hornets.' Hueys used to transport commando teams were called 'Slicks,' and were armed with 7.62mm M60s suspended from bungee cords. A long rod was attached to the M60's barrel to prevent an overzealous gunner from firing into the tail rotor. This Huey's crew chief fashioned a combination seat and ammunition box. (Michael W. Bedwell)

The USAF fitted 20 UH-1Fs with hardpoints and heavy weapons systems, then redesignated them as UH-1Ps. Crew-operated 7.62MM XM-93 Miniguns replaced M60s, and external pylons typically carried seven-tube 2.75-inch (70MM) rocket launchers. The T58 engine installation required that the exhaust be routed to the starboard side. (Jim Green)

A 20th SOS crewman demonstrates the UH-1F's right gunner's position. An M60 machine gun is mounted on a 'Sagami' mount. The gunner fired this weapon while standing on the landing skids. A nylon strap and harness assembly kept the gunner from falling out of the aircraft during combat and violent maneuvers. Both right and left gunners fired these weapons during team insertions and extractions. The 'Green Hornets' primarily supported Special Forces teams during cross-border missions in Southeast Asia. (US Air Force)

Southeast Asia-based UH-1F/Ps were painted in a tactical camouflage scheme similar to that painted on USAF aircraft in the theatre. Upper surfaces were Dark Green (FS34079) and Tan (FS30219), while undersurfaces were Light Gray (FS36622). The avionics access panel on the nose is flat Black, with a White number (4). The US national insignia is painted on the upper forward fuselage. The Huey is armed with a 7.62MM XM-93 (later GAU-2B/A) Minigun and a seven-tube 2.75-inch rocket launcher on each side. This UH-1P (AO/64-15484) was assigned to the 317th SOS, 1st Special Operations Wing (SOW) at Hurlburt Field, Florida in 1970. This Squadron trained crews for the 20th SOS 'Green Hornets,' which were deployed to Vietnam. (US Air Force)

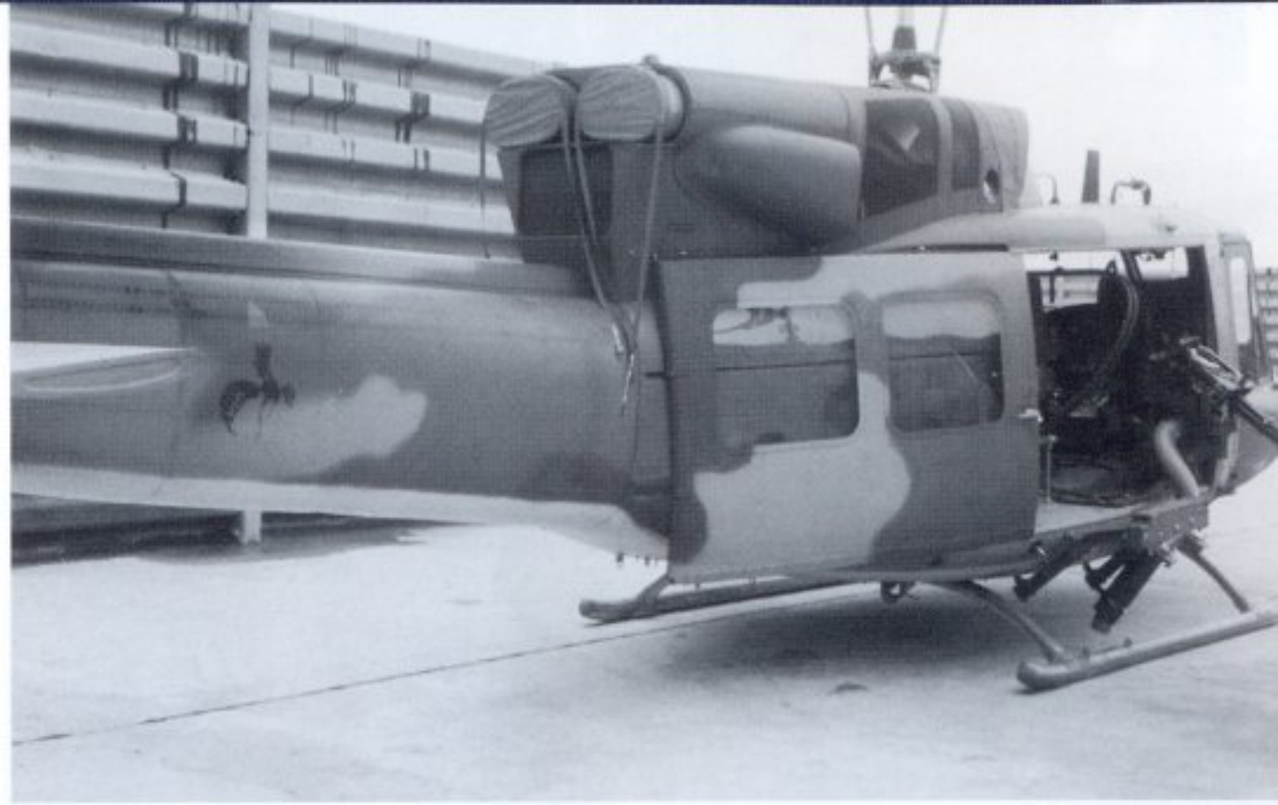
Ammunition belts for the XM-93 Minigun ran from a magazine fitted into the UH-1P cabin's aft bulkhead. A flexible tube safely diverted the large amount of spent cartridges from the XM-93 below the aircraft, where they did not damage the tail rotor. The weapon system and crewmen left little excess room in the UH-1P's cabin. A variety of grenades were hung on the ammunition storage trays. A Black rectangle painted on the door post had space for crew chiefs to write armament notes in chalk. The UH-1P has the particle separator fitted over the engine intake. This separator filtered out the dust common in the Vietnamese air during the dry season. Two VHF/UHF blade antennas were fitted on the UH-1F/P's cabin roof. (James Pedriana)



Bell UH-1N Iroquois Specifications

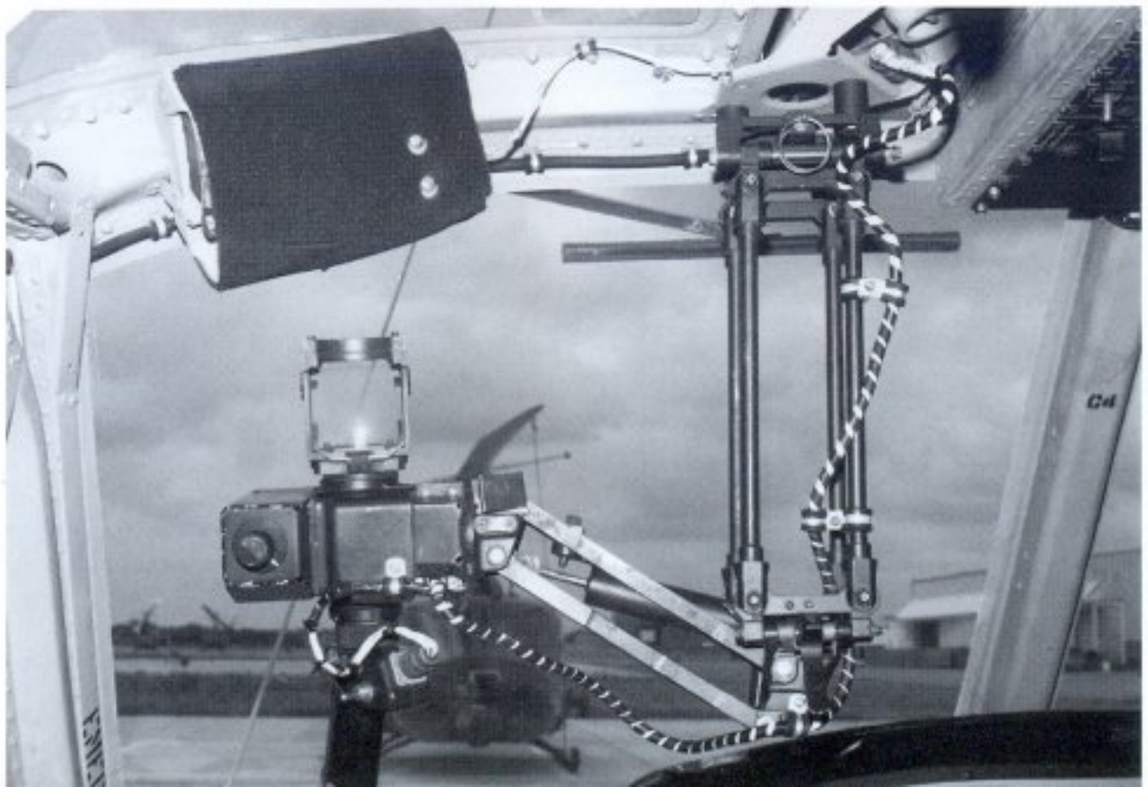
Main Rotor Span:....48 feet 2.25 inches (14.7 M)
Fuselage Length:....42 feet 4.75 inches (12.9 M)
Height: .....12 feet 10 inches (3.9 M)
Empty Weight: .....6143 pounds (2786 KG)
Maximum Weight: ..10,500 pounds (4763 KG)
Powerplant: .....One 1800 SHP Pratt & Whitney Canada T400-CP-400 Turbo-Twin Pac turboshaft engine
Armament: .....Two 7.62MM GAU-2B/A Miniguns with 4000 rounds on the fuselage sides.
Performance:
Maximum Speed:..126 MPH (203 KMH)
Service Ceiling: ....15,000 feet (4572 M)
Range: .....248 miles (399 KM)
Crew:.....Two

The UH-1N entered service with the USAF in the Fall of 1970. This variant was powered by an 1800 SHP Pratt & Whitney Canada T400-CP-400 Turbo-Twin Pac turboshaft engine. This powerplant combined two 900 SHP PT6 engines with a common gearbox and drive shaft. The T400 allowed the UH-1N to fly safely with one engine out. (Gerhard Weinmann)

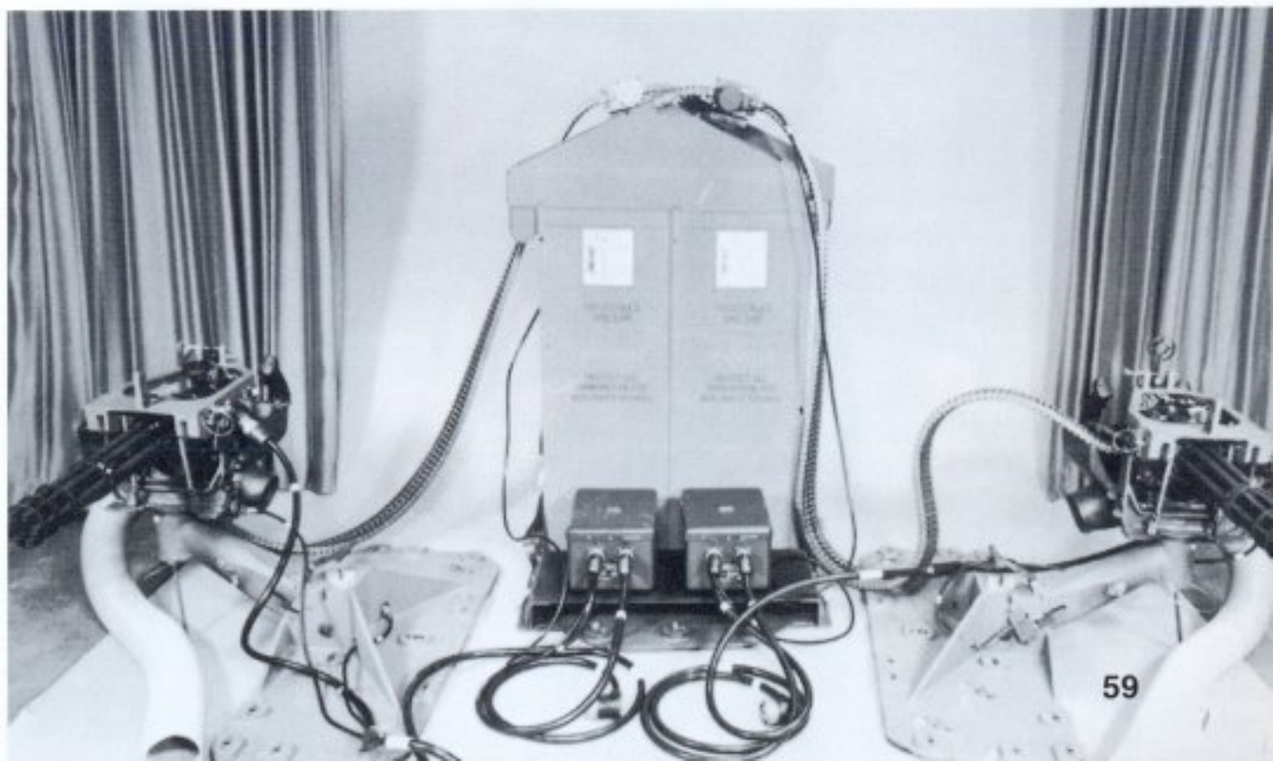


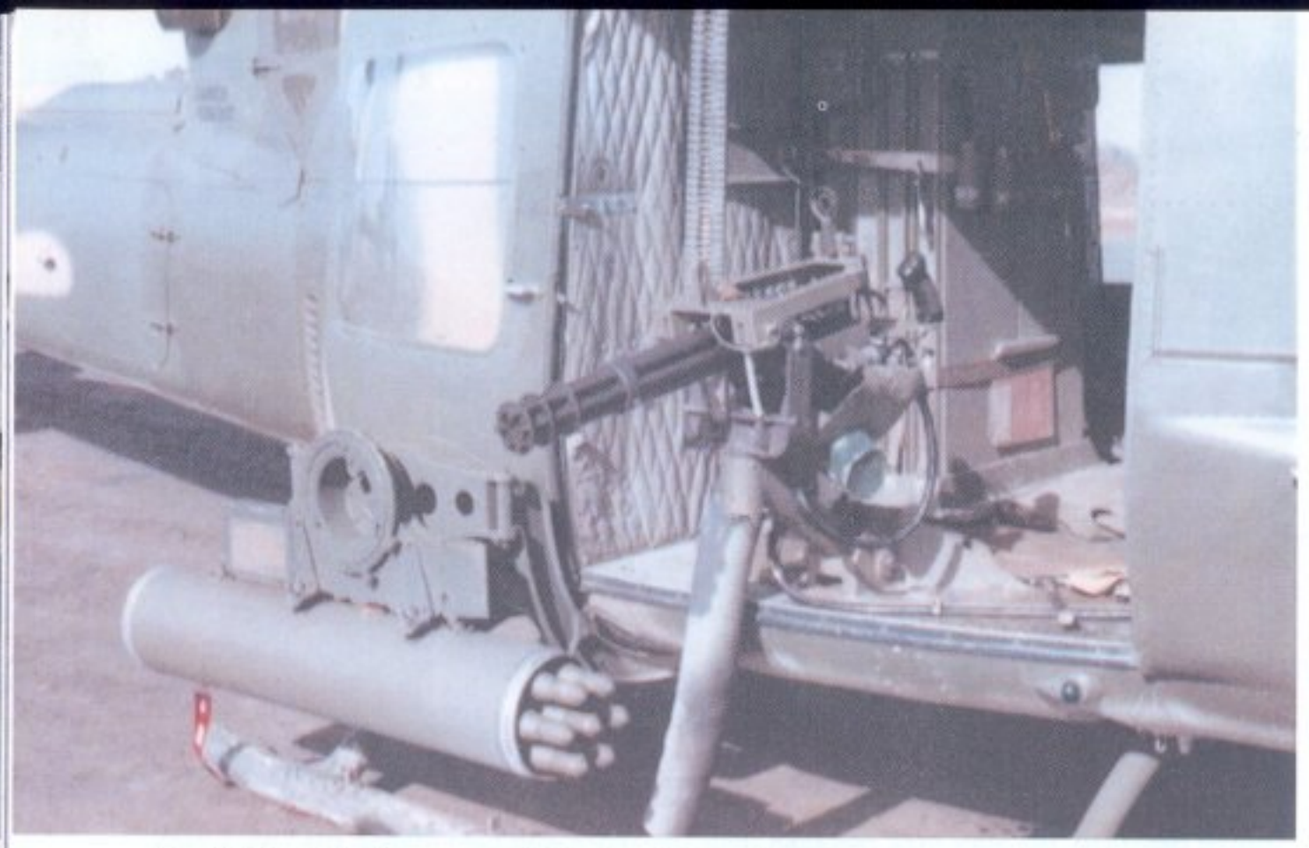
During late 1970, the 20th SOS replaced their UH-1F/Ps with twin-engine UH-1Ns, which were similarly armed with XM-93 Miniguns. The N model offered both greater engine power and more cabin room than the earlier Hueys. The 'Green Hornets' insignia was painted in Black on the tail boom. (David Galvan)

USAF Huey gunships employed the XM-6 machine gun sight, which is shown installed on a US Army UH-1C. The co-pilot/gunner gripped the black handle at the bottom to move the sight. He fired the guns using a trigger fitted to the handle's front (unseen in this photograph). A black head pad is fitted to the windshield frame. (Bell)



General Electric displayed its complete 7.62MM GAU-2B/A (XM-93) Minigun system used on USAF Hueys. A 4000-round magazine supplied ammunition to both guns through metal chutes. These weapons could be adjusted to fire at either 2000 or 4000 rounds per minute (RPM). Flexible tubes mounted below the XM-93 breeches vented spent cartridges away from the aircraft. (General Electric)





The UH-1F/P's tailboom was 18 inches (45.7 cm) longer than for the UH-1B/C. This allowed the installation of a two-bay baggage compartment on the right side, beneath the engine exhaust. A seven-tube 2.75-inch XM-157 rocket launcher is fitted to the XM-156 universal mount. (Jim Burns)

A pintle-mounted XM-93 is installed on the starboard side of this UH-1P. Ammunition was fed through a flexible chute from a magazine located in the aft cabin. Two spade grips for the gunner to aim and fire the weapon are mounted on the XM-93's aft end. (James Pedriana)

A 'Green Hornets' gunner demonstrates the position for firing the XM-93 (GAU-2B/A). The flexible ammunition chute took a circuitous route from the gun to the ammunition storage to allow the gunner freedom of movement. Huey door gunners wore the same flight suits and helmets worn by the pilots. (David Galvan)

This earlier 'Sagami'-mounted M60 used an ammunition container designed for the Army's XM-23 door gun system. A 500-round ammunition box was fitted to the mount, with a metal chute used to send ammunition to the weapon. Dual VHF/UHF antennas were common fixtures on the cabin roofs of USAF UH-1F/Ps. (Bob Hill)

This UH-1F used an improved version of the 'Sagami' mount for firing the M60A. The newer mount was a simpler design over the original 'Sagami' mount and it offered more lattitude for the machine gun and its gunner. (Author's Collection)

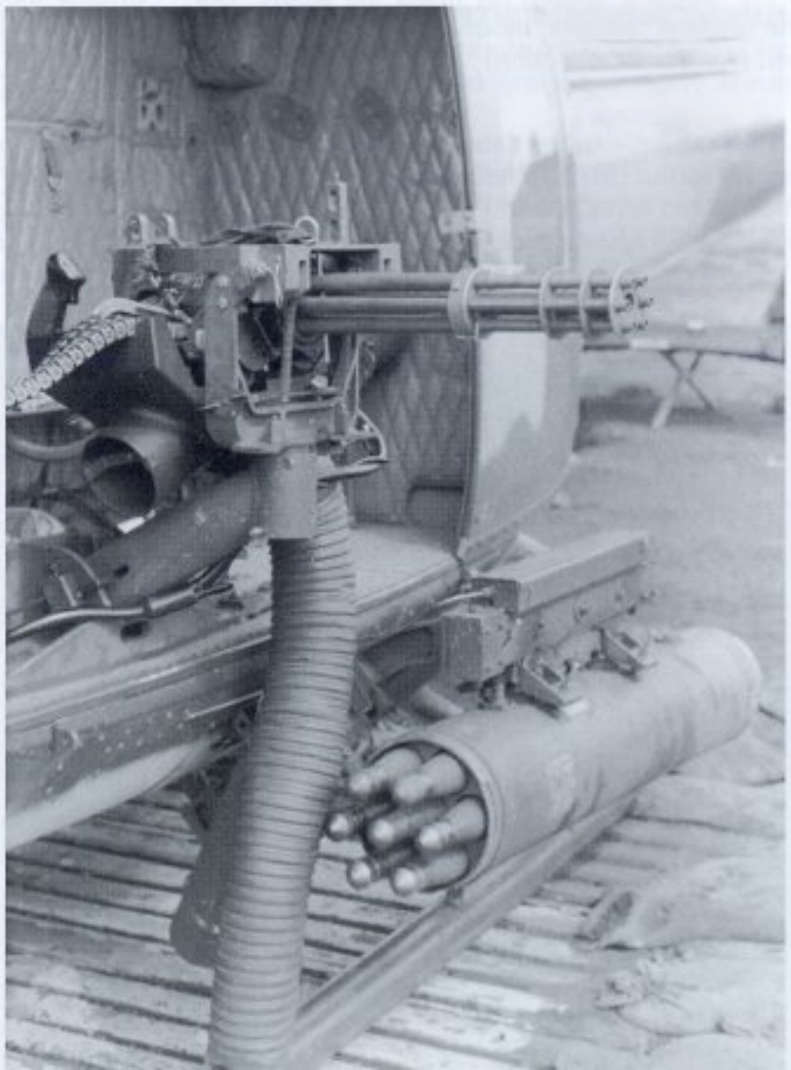
Engine intake screens are fitted to this UH-1F in Vietnam. The baggage compartment hatch was hinged at the right and opened with a latch on the left. Huey cabin crewmen wore nylon 'monkey harnesses' (named for what organ grinders' monkeys wore) in case they fell from the aircraft during combat or violent maneuvers. (James Pedriana)

An XM-93 is installed on this USAF UH-1N. This variant's larger cabin gave more room for gunners, weapons, and ammunition than on the earlier UH-1E/P helicopters. A bench seat is installed beside the center fuel tank section. A red REMOVE BEFORE FLIGHT tag is fitted to the XM-93's safety pin, which prevented the weapon's accidental discharge. (David Galvan)

A 'Green Hornets' crewman loads 2.75-inch Folding Fin Aircraft Rockets (FFARs) into a seven-tube LAU-59/A launcher, which was equivalent to the Army's XM-157 pod. Rockets were individually launched from these pods to reduce aerodynamic loads upon the helicopter. A 'chicken plate' armored vest (sometimes called a 'flak jacket') rests atop the rocket mount. (David Galvan)

A 20th SOS co-pilot straps into a UH-1N's left seat prior to a mission. An XM-6 reflex sight is stowed near the overhead console. This sight aimed and fired the forward-firing guns and rockets. The seat's large armor panel slid forward after the pilot was strapped in. This panel gave side protection from projectiles and shrapnel. A textured grip throttle is located near the top of the collective lever, which is beside the co-pilot's left leg. (Jim Green)

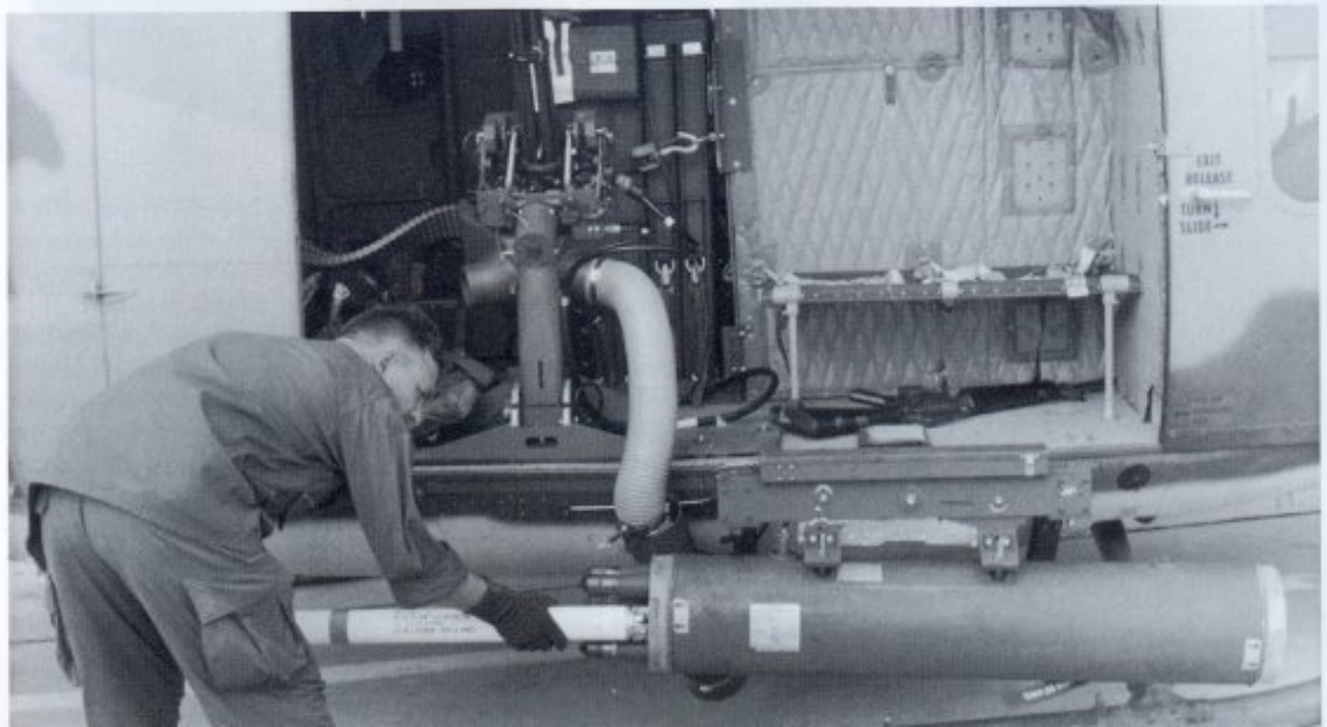
(Above) Two Air Force technicians service the UH-1N's simple rocket mount and LAU-59/A launcher. The Cessna A-37B Dragonfly and other USAF fixed-wing aircraft also used this rocket launcher. Sway braces attached to the pylon flank the LAU-59/A's fore and aft mounting lugs. These braces keep the pod from moving sideways in flight. (Jim Green)

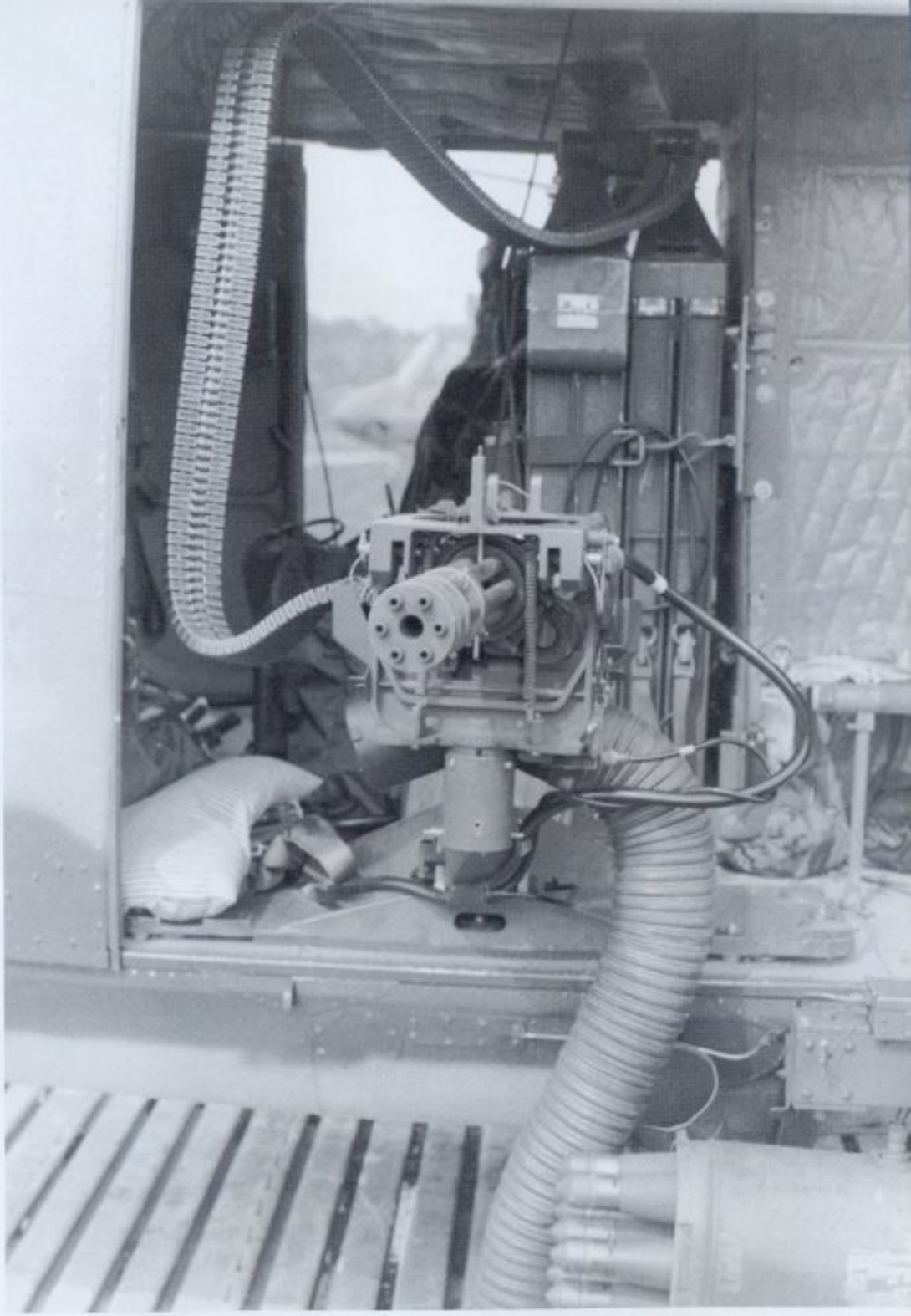


(Left) An XM-93 Minigun is mounted on the port cabin opening on a USAF UH-1N. This six-barreled machine gun fired at either 2000 or 4000 RPM; however, the higher firing rate increased both the ammunition usage and the likelihood of rounds jamming in the weapon. The spent cartridge tube's lower end rests on the landing skid. Seven FFARs are loaded into the LAU-59/A launcher. (James R. Wagner)

XM-93 Miniguns are fitted to pintel mounts in both the left and right cabin doorways on this Huey. The use of dual hand-operated Miniguns gave 'Green Hornet' crews the maximum available firepower to protect Special Forces teams. The 20th SOS was the USAF's first combat helicopter squadron. (General Electric)

An armorer loads a 2.75-inch FFAR into the LAU-59/A launcher, which became the standard rocket launcher for 20th SOS gunships. The XM-93's flexible cartridge tube was guided through a solid tube attached to the UH-1N's lower fuselage. Built-in stops prevented crewmen from firing these weapons into the aircraft. (Jim Green)





'Green Hornet' crews quickly became adept at firing and maintaining the XM-93, which was more complex than the M60s they replaced. The Minigun's 2000 or 4000 RPM firing rate was considerably greater than the M60's 550 RPM. The XM-93 has a muzzle velocity of 2850 feet (869 M) per second, which is slightly better than the M60's 2805 feet (855 M) per second muzzle velocity. Both weapons fire the same 7.62x51MM North Atlantic Treaty Organization (NATO) standard ammunition. The LAU-59/A carries a full load of High Explosive (HE) rockets. (James R. Wagner)

A technician services the avionics of a UH-1P assigned to the 20th SOS. The Huey's crew placed inserts from their personal protective armor in the chin bubbles as added protection from ground fire. The right 7.62MM Minigun was tilted aft into the main cabin, which allowed for closing the door. Unusually, this Huey had Light Green (FS34102) portions on the upper surfaces, which were also camouflaged in Dark Green and Tan. The Light Green was standard on USAF fixed wing aircraft and most helicopters, but was not usually painted on UH-1F/Ps. A fully loaded LAU-59/A rocket launcher is fitted to the right universal mount. The Squadron's hornet insignia is painted on the tailboom. (Darwin Edwards)

Seven-Tube 2.75-Inch (70MM) XM-157 (LAU-59/A) Folding Fin Aircraft Rocket (FFAR) Launcher

Seven-Tube 2.75-Inch XM-158 FFAR Launcher

This 'Green Hornets' UH-1P (63-13158) sits at its forward airfield in Vietnam prior to its next mission. It was lost on an operation on 26 March 1969. The baggage compartment door is opened on the tailboom immediately aft of the main cabin. The UH-1F 'Slick' in the background was armed with M60A machine guns on 'Sagami' mounts. US troops called Huey transports 'slicks' because they were not encumbered by external armament like the gunship variants. The 20th SOS was established at Tan Son Nhut Air Base (AB), South Vietnam on 8 October 1965. It moved to Nha Trang AB on 15 June 1966, then to Tuy Hoa AB on 5 September 1969. Finally, the Squadron was based at Cam Ranh Bay AB from 25 September 1970 until its inactivation on 1 April 1972. (Darwin Edwards)

A flight of three 20th SOS UH-1Ps heads for Vietnam's border with Laos in July of 1970. Full loads of 2.75-inch rockets are carried on the seven-tube LAU-59/A launchers. Red position lights are turned on above and below the main cabin opening. Green lights are located on the right side in the same areas. (James Pedriana)

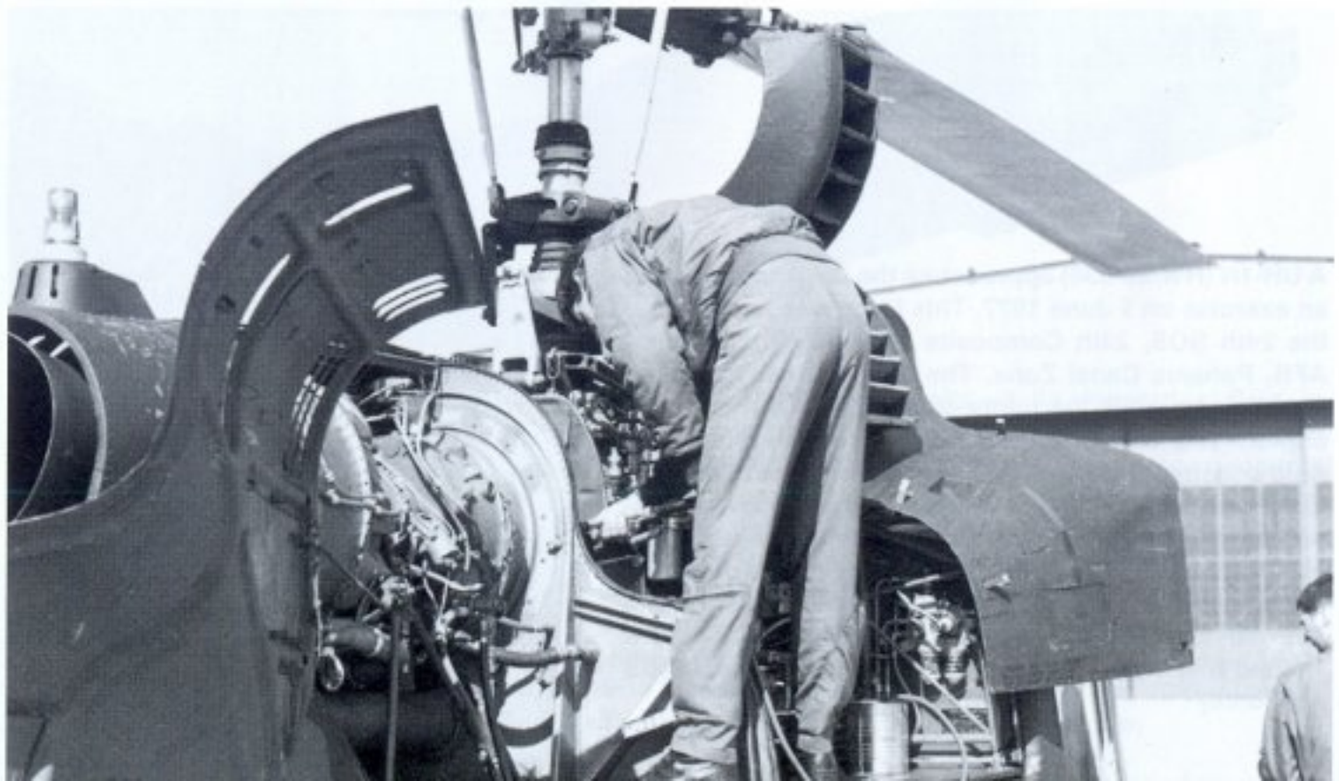
Acquiring the twin-engine UH-1N provided the 'Green Hornets' with a faster and more powerful aircraft than their earlier UH-1F/Ps. It also meant an increased cabin area in the event 'slicks' made emergency pickups of commando teams. Three UH-1Ns fly towards their contact point in August of 1971. (James R. Wagner)

A UH-1N (HW/69-636) approaches the target area during an exercise on 5 June 1977. This Huey was assigned to the 24th SOS, 24th Composite Wing (CW) at Howard AFB, Panama Canal Zone. The door gunner is aiming his Minigun while the pilots slowly maneuver the helicopter. The UH-1N is camouflaged in the Southeast Asia scheme of Dark Green, Light Green, and Tan over Light Gray. The Wing's HW tail code and the serial number on the tail boom are both Insignia White. Other markings include the 24th CW insignia on the doorpost and the TAC insignia on the vertical stabilizer. A 'Long Line' HF antenna is mounted on the tail boom. The UH-1N had a sharper nose profile than earlier Hueys. (US Air Force)

A crewman inspects the main rotor assembly on a UH-1M prior to a mission. This helicopter was assigned to the 1st Squadron, 167th Air Cavalry Regiment (1/167th), Nebraska Army National Guard (ARNG) at Lincoln Municipal Airport, Nebraska. Army Hueys' light gray or natural metal rotor components were repainted black beginning in the 1980s. This color change reduced the components' visibility on night operations. The arched opening near the screened engine intake was a main generator air intake. An FM homing antenna is located near the crewman's foot. (Butch Lottman)

A UH-1B (64-13938) equipped with the XM-31 armament system flies low over South Vietnam. The XM-31 consisted of two 20MM M24A1 cannon pods – one per side – attached to the fuselage using specially fabricated mounts. A magazine in the cabin held 500 rounds per gun, which fired at a rate of 700 RPM at a range of 766 yards (700 M). The XM-31 was not widely used by Army helicopter units in Vietnam. (US Army)

A crewman services the T53-L-13B engine of a 1/167th, Nebraska ARNG UH-1M in 1987. This 1400 SHP engine replaced the 1100 HP T53-L-9/11 on the UH-1C. The three-piece engine air intake's center section is in the open position. (Butch Lottman)



Two aviators assigned to the 12th Combat Air Group load a Hughes XM-26 (later BGM-71A) Tube-Launched, Optically-tracked, Wire-guided (TOW) missile system into a UH-1B's right three-tube launcher. Hughes developed this missile in 1967 and it was a major improvement over the AGM-22B (US-built SS.11) then in US Army service. The 12th Combat Air Group deployed a pair of TOW-equipped UH-1Bs to South Vietnam in April of 1972 to counter North Vietnamese armor during the Spring Invasion. (US Army)

Both TOW-equipped UH-1Bs were credited with destroying 26 North Vietnamese tanks, and decimating other enemy equipment, during the Spring Invasion. The system remained in Vietnam until January of 1973. The Hueys wore a haphazard camouflage until they were painted OD and black. Kills were tallied on the doorposts of these helicopters; this UH-1B is credited with eight tanks and three trucks destroyed. (US Army)

The Army fitted two UH-1Bs with a pair of three-tube TOW missile launchers. A Telescopic Sight Unit (TSU) was built into the Huey's port chin bubble area. The TOW was developed as a ground fired weapon to replace both the 106MM recoilless rifle and the AGM-22B, but was soon adopted for helicopters. The 45.8-inch (116.3 CM) long BGM-71A TOW weighed 41.5 pounds (18.8 KG), including a 5.4 pound (2.4 KG) warhead. It reached a maximum velocity of 981 feet (299 M) per second and had a range of 3281 yards (3000 M). (Bell)

Among the wide variety of weapon combinations carried by Vietnam-based Hueys was this 7.62MM XM-93 (GAU-2B/A) Minigun. It was fitted to a field-developed mount for manual operation. Although the XM-93 normally had a firing rate of 6000 RPM, the Army reduced this to 1500 RPM for lower ammunition consumption. The Xenon searchlight beside this weapon was designed for use on the M551 Sheridan armored reconnaissance vehicle. The Huey night fighter was assigned to the 92nd AHC at Dong Ba Thin, South Vietnam. (Rob Mignard)

Although long-fuselage UH-1D/H/N Hueys were intended for troop transport, their ability to trade blows with the enemy was not to be underestimated. Transport ('slick') Hueys – except for some medical evacuation (medevac, or 'dustoff') UH-1s – were armed with the XM-23 door gun system. The XM-23 consisted of a pintle-mounted 7.62MM M60D machine gun, 'brass bag,' and a flexible ammunition chute connected to a 200-round ammunition box. Stock XM-23s were often modified by removing the chute and bag, and by replacing the small ammunition box with a larger container. Two ground maneuvering wheels are attached to the landing skid. (Author)

This UH-1H's .50 caliber (12.7mm) M2HB machine gun was augmented by the door gunner's M60A, which was temporarily removed from this aircraft. Boxes holding 900 rounds of .50 caliber ammunition and 2500 rounds of M60 ammunition were carried under the unusual seating arrangement. A 5.56mm M16A1 assault rifle and several grenades – including two red thermite incendiary grenades – were hung on the transmission compartment wall. (Author's Collection)

The US Army modified five UH-1Cs with Remote Image Intensifier Systems under the noses. These systems enhanced moonlight to spot targets at night. Four of these Hueys – nicknamed 'Batships' – were deployed to Vietnam for evaluation in June of 1966. One of the 'Batships' (65-9439) is parked at Tan Son Nhut AB, Vietnam in September of 1966. (Terry Love)

In 1969, the 1st Cavalry Division (Airmobile) tested the Iroquois Night Fighter And Night Tracker (INFANT) system in Vietnam. Four UH-1Ms were modified with Low Light Level Television (LLLTV) equipment to find targets. One of them (66-8703) undergoes predeployment tests at Fort Rucker, Alabama. Each INFANT Huey was armed with the XM-21 system of two XM-134 Miniguns and two seven-tube XM-158 rocket launchers. A 500-watt Xenon searchlight topped each Minigun. 'Dim tracer' ammunition was developed specially for use with the INFANT system. (US Army)

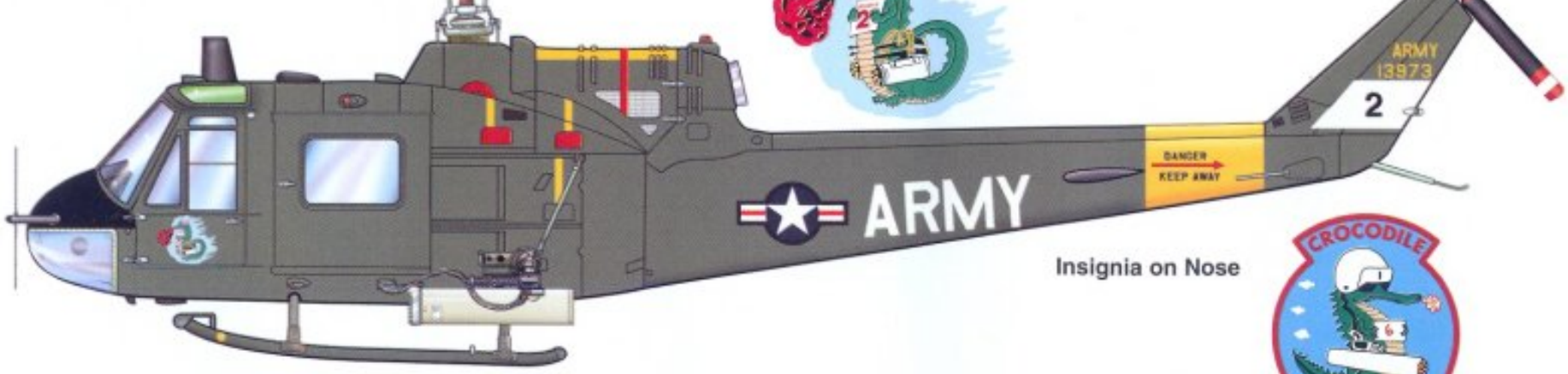
In 1985, the Army began modifying a small number of long-fuselage Hueys to simulate Soviet Mil Mi-24 (Hind) gunships for the aggressor role in training. The Opposing Force (OPFOR) aircraft had Visual Modifications (VISMODS) done to the nose and cabin doors, and they were painted in Soviet-style camouflage and markings. This OPFOR JUH-1H (04/67-17855) is displayed at Fort Irwin, California in June of 1988. Fort Irwin is home to the Army's National Training Center (NTC), where US soldiers undergo realistic tactical training. (Bob Niedermeier)

The US Army used this UH-1D (65-10130) to test a wide variety of weapons systems while assigned to the Army Concept Team In Vietnam (ACTIV) at Tan Son Nhut AB. It is equipped with the Heliborne Illumination System 'Lightning Bug' mated with a .50 caliber M2HB machine gun in 1967. 'Lightning Bug' consisted of a group of seven lights that were aimed by a crewman inside the cabin. The Huey's crew used this to find enemy targets at night, which were then fired on by the M2HB. This UH-1D is in the standard overall Olive Drab, with Black markings and anti-glare panel. (US Army)

The only heavily armed long-fuselage single-engine Hueys flown operationally in Vietnam belonged to the South Vietnamese Air Force (VNAF) and the Royal Australian Air Force (RAAF). This RAAF UH-1D (A2-773) pours Minigun and door gun fire into an enemy position. This aircraft was assigned to No 9 Squadron, which flew from Vung Tau, South Vietnam in support of Australian troops there. The overall Olive Drab Huey has RAAF and a kangaroo in Black on the tailboom. The Black serial number is painted above a Red (front), White, and Blue fin flash. (Bell)

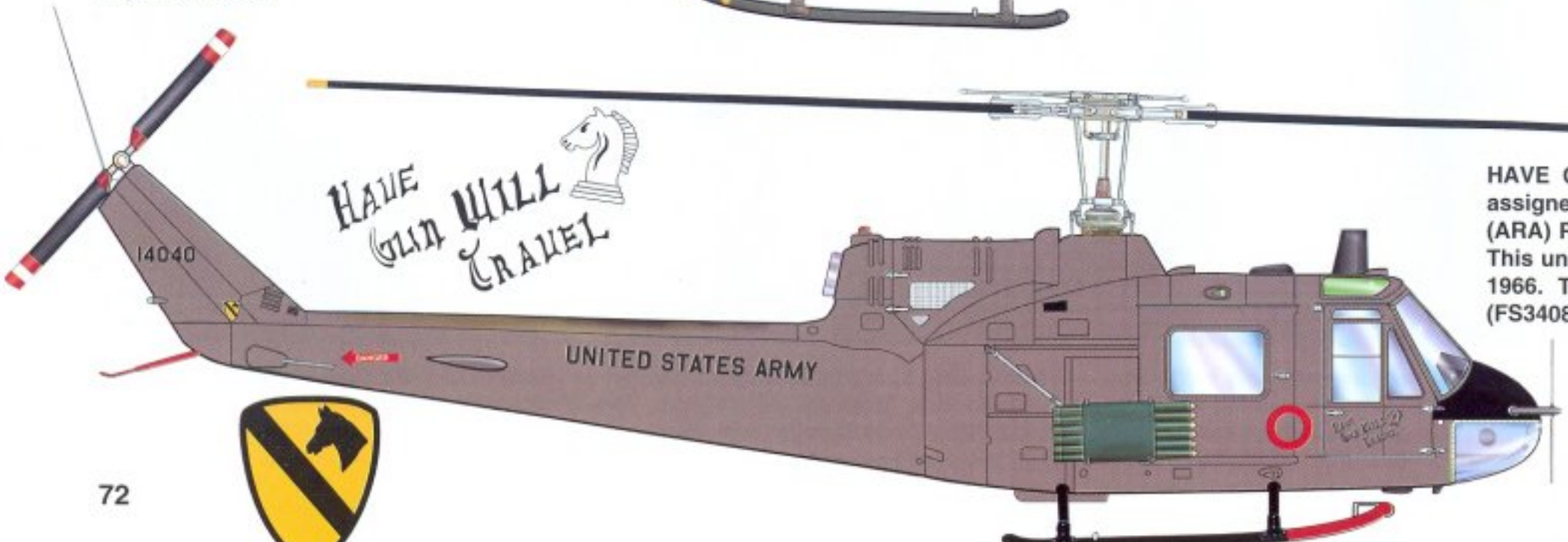
This Bell UH-1B Iroquois (64-13997) is armed with the 'Heavy Hog' combination of 24-tube 2.75-inch (70MM) XM-3 rocket launchers and the nose-mounted 40MM XM-5 grenade launcher. It was assigned to A Company, 501st Aviation Battalion at Bien Hoa, South Vietnam in early 1965. This Battalion was called both the 'Rattlers' and 'Firebirds.' It is painted overall glossy Olive Drab (FS14087), with a glossy Orange-Yellow (FS13538) tail band. Colored roof bands identified the 501st's parent command.

'Crocodile 2' was a UH-1B (64-13973) flown by the 3rd Gun Platoon, 119th Aviation Company at Pleiku, South Vietnam. The Platoon was originally called the 'Widow Makers' before being renamed the 'Crocodiles.' It was armed with the XM-134 machine gun system (four 7.62MM M60Cs) and 2.75-inch M-157 rocket pods. High visibility markings on this and other Hueys gave way to subdued markings from 1965.



Insignia on Nose

HAVE GUN WILL TRAVEL was a UH-1B (64-14040) assigned to 2nd Battalion, 20th Aerial Rocket Artillery (ARA) Regiment, 1st Air Cavalry Division (Airmobile). This unit was based at An Khe, South Vietnam in late 1966. The Huey is painted overall flat Olive Drab (FS34087), with low visibility markings.



Insignia on Nose

The US Army transferred several Hueys, including this UH-1C (308), to the US Navy in 1967. This helicopter was assigned to Light Attack Helicopter Squadron Three (HA(L)-3) 'Seawolves,' which were part of Task Force 116. This Task Force consisted of Hueys, patrol craft, and ground forces that sought to deny the enemy use of South Vietnam's inland waterways.

This overall glossy Olive Drab UH-1B (48/64-14012), BATTLIN' BITCH, was assigned to the 'Jokers,' the Gun Platoon of the 48th Assault Helicopter Company (AHC) at Phan Rang, South Vietnam between 1965 and 1970. The XM-21 weapon system mounted on this Huey consisted of one 7.62MM XM-134 (later GAU-2B/A) Minigun and one seven-tube 2.75-inch XM-158 rocket launcher on each side.

The 'Sidekicks,' the Gun Platoon of the 92nd AHC, flew this UH-1C (92/66-679) from Dong Ba Thin, South Vietnam in 1969. It is armed with two 19-tube XM-200 rocket pods along the sides. The upper surface of one main rotor blade was painted white for identification purposes in 1969.

Long-fuselage Huey variants were designed primarily for the troop transport role; however, they qualified as gunships when equipped with offensive armament. The first UH-1D (65-9565) served as a gunship demonstrator. It is equipped with the XM-3 system of two 24-round 2.75-inch rocket launchers on the fuselage sides. This overall Olive Drab Huey has White stenciling, which was soon replaced by Black low-visibility stencils. The 'High Line' HF antenna is mounted on the tail boom. An Orange-Yellow arrow on the aft tail boom has DANGER in Black. This arrow warns ground personnel of the tail rotor. (Bell)

The large and bulky XM-3 rocket launcher often served to display artwork or unit emblems. Gunner Gene Cabigas poses by the right XM-3 of a UH-1B. It is decorated with the insignia of the 'Thunderbirds,' A Company, 101st Aviation Battalion, 101st Airborne Division. This Company flew from Bien Hoa AB from December of 1967 until February of 1972. SOC TRANG is painted above and WARRIORS is below the thunderbird on the emblem. The bird and lettering are Black on a White background with a Red border. A Company was based at Soc Trang, South Vietnam from April of 1965 until September of 1966. This Company's colors then returned to the 101st Airborne Division's home at Fort Campbell, Kentucky; however, the assets – and Thunderbirds insignia – were given to the 336th Aviation Company (Assault Helicopter), 13th Aviation Battalion 'Warriors' at Soc Trang. (Charles J. Slezak)

A UH-1M (64-14123) armed with the XM-22 missile system is displayed at an airbase open house. This Huey was assigned to Company D, 47th Aviation Battalion, Wisconsin Army National Guard (ARNG) at Truax Field in Madison during the 1970s and early 1980s. This Huey is overall Helo Drab (FS34031), with flat Black markings and upper tail boom – the latter to hide engine exhaust stains. The blue and white ARNG insignia – featuring the National Guard's minuteman figure – is placed on the cockpit door. A light blue AGM-22B (SS.11B1) wire-guided anti-tank missile is mounted on the port weapons pylon. UH-1Ms were withdrawn from ARNG service beginning in 2001. The US Army and ARNG will retire the last Hueys from front-line service at the end of 2004. (Terry Love)

This UH-1E Iroquois (TV-17) was assigned to Marine Light Helicopter Squadron One Sixty Seven (HML-167) at Phu Bai, South Vietnam in 1968. Marine UH-1Es deployed to Vietnam were armed with six 7.62MM machine guns: four fixed forward and fired by the pilot, and two crew-served weapons in the cabin. The Huey is painted overall Marine Field Green (FS34095).

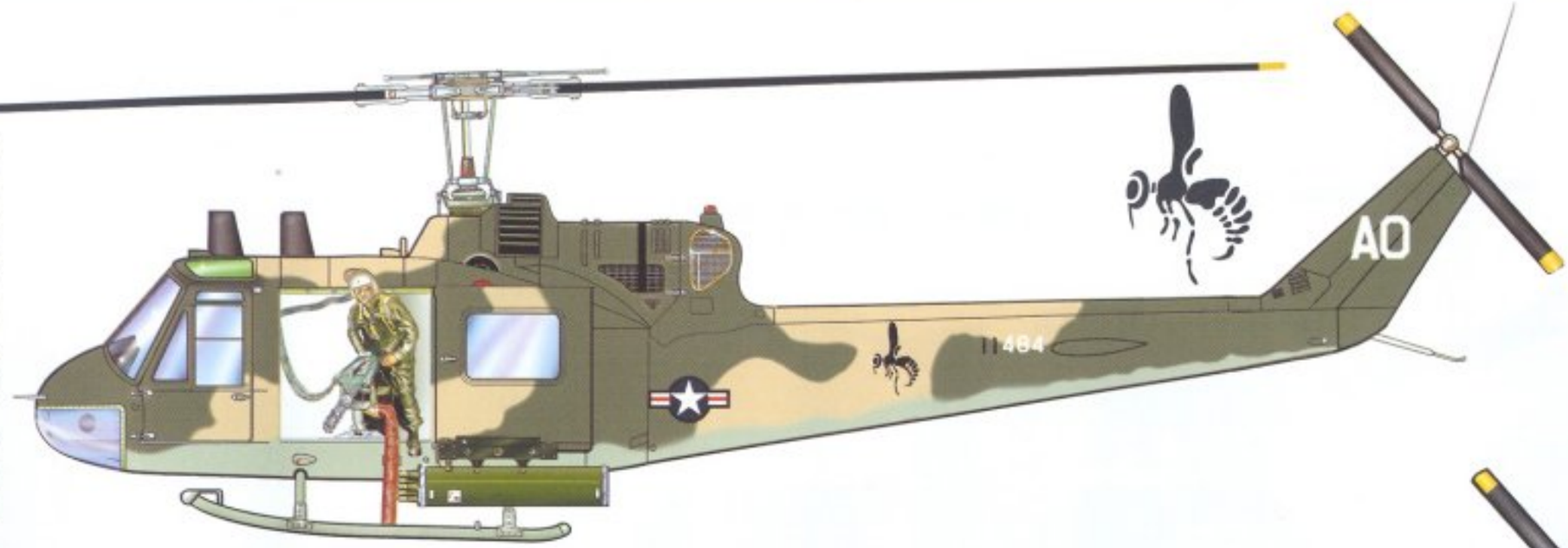
Insignia on Nose

This UH-1C (66-676) was flown by 'The Rat Pack,' the Gun Platoon of the 187th AHC 'Crusaders' at Tay Ninh, South Vietnam between 1967 and 1970. The Huey is armed with a 'Frog' combination of one nose-mounted 40MM XM-5 grenade launcher and two side-mounted seven-tube 2.75-inch XM-159 rocket pods.

The 1st Platoon 'Playboys,' 334th AHC at Bien Hoa flew this UH-1C (65-9438) from the late 1960s. This Company began operations in Vietnam in 1966 and evolved from the Utility Tactical Transport Helicopter Company (UTTHCO), which brought some of the first Hueys to Vietnam in the early 1960s.

Insignia on Nose

This UH-1P (AO/11484) was assigned to the 317th Special Operations Squadron (SOS), 1st Special Operations Wing (SOW) at Hurlburt Field, Florida in early 1970. This unit trained crews for the 20th SOS 'Green Hornets,' whose insignia is painted in black on the tail boom. The Huey is camouflaged in the Alternate Southeast Asia scheme of Dark Green (FS34079) and Tan (FS30219) over Light Gray (FS36622).



The 'Razorbacks,' the Gun Platoon of the 120th AHC, flew this UH-1D (314) from Bien Hoa in 1971. Troop-carrying Hueys were not normally assigned to AHC's gunship platoons in Vietnam. A Xenon searchlight is mounted in the aft cabin, aft of the crew-served 7.62MM M60 machine gun. Tally marks painted on the doorpost indicate this Huey's victories: 34 sampans sunk and 26 Viet Cong guerrillas killed.

Marine Light Attack Helicopter Squadron Seven Seventy Five (HMLA-775) flies this UH-1N (WR-42/BuNo 158558) from Camp Pendleton, California. It is armed with crew-served M60 machine guns and 2.75-inch LAU-68 rocket launchers. The Huey is painted overall Light Ghost Gray (FS36375), with Blue Gray (FS35237) upper surfaces and markings.

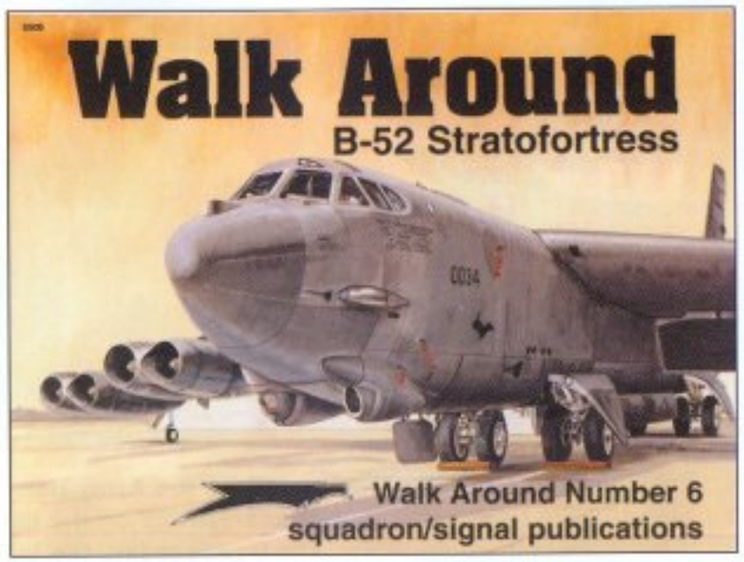
Some Hueys, although devoid of weapons systems, proved their usefulness as a weapons platform by transporting heavy weapons. This HU-1A (58-2085) – the seventh production Huey – was assigned to the 101st Aviation Battalion, 101st Airborne Division at Fort Campbell. The Battalion was the first US Army unit equipped with the Huey. This helicopter supported the Division's missile battery, which it demonstrates by sling loading an Emerson Electric M51 Little John rocket and its M34 launcher. The M51 (MGR-3A from 1963) was an unguided rocket 14 feet 5.7 inches (4.4 M) long that weighed 800 pounds (363 KG). It had a range of 11 miles (17.7 KM) and carried either a conventional or nuclear warhead. The Little John was in US Army service from early 1961 until mid-1969. A US Air Force Lockheed C-130 Hercules transport is parked in the background. (US Army)

This rocket armed UH-1M (65-9536) was assigned to an unknown Army National Guard (ARNG) unit in 1983. Seven-tube 2.75-inch rocket launchers are mounted on the universal mounts. A variation on the ARNG insignia – this one in red, white, and blue – is located on the cockpit door. The last three digits of the serial number (536) on the vertical stabilizer are painted a light gray, while the rest of the serial and UNITED STATES ARMY on the tail boom are flat Black. (Author's Collection)

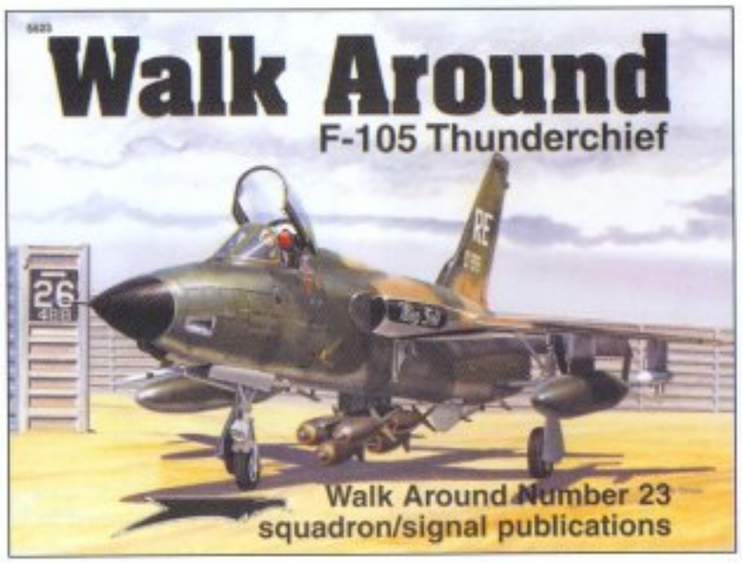
This XM-3 armed UH-1B (62-2099) displayed at Fort Rucker memorializes the Army Huey gunship. It is painted in the overall glossy Olive Drab scheme; however, ARMY on the tail boom is in Orange-Yellow instead of the correct Insignia White. The 0 proceeding the tail number indicated an aircraft at least ten years old. This was used by Army and Air Force aircraft between 1956 and 1964. The US Army Aviation Museum at Fort Rucker displays the first XH-40 prototype (55-4459). (Author)

The only Huey gunships remaining in front-line US service are the US Marine Corps' UH-1Ns. This example (WR-42/BuNo 158558) is operated by Marine Light Helicopter Attack Squadron Seven Seventy Five (HMLA-775) at Camp Pendleton, California. The Huey is deployed to Naval Air Station Joint Reserve Base (NAS JRB) Willow Grove, Pennsylvania in August of 2002. This aircraft is painted overall Light Ghost Gray (FS36375), with Blue-Gray (FS35237) upper surfaces and markings. Two M60Ds are mounted in the cabin doorways while a pair of seven-tube 2.75-inch LAU-68 rocket launchers are fitted to the fuselage sides. A laser detection and warning system is mounted over the cabin doorway. The third-generation Forward Looking Infrared (FLIR) under the nose was carried over to the UH-1Y, which will carry on the tradition of the Huey gunship. The UH-1Y is a UH-1N with four-bladed main and tail rotors and other internal improvements. This variant is scheduled to enter service in March of 2008. (Mike Wilson)

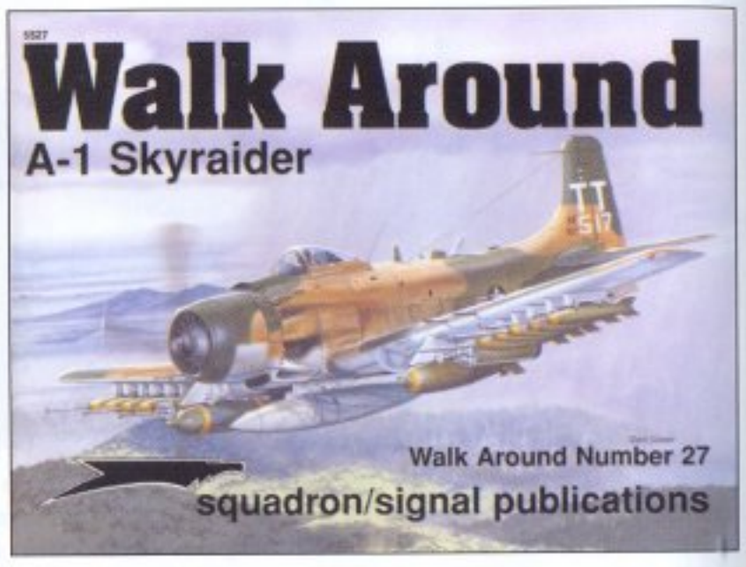
More Vietnam War Aircraft



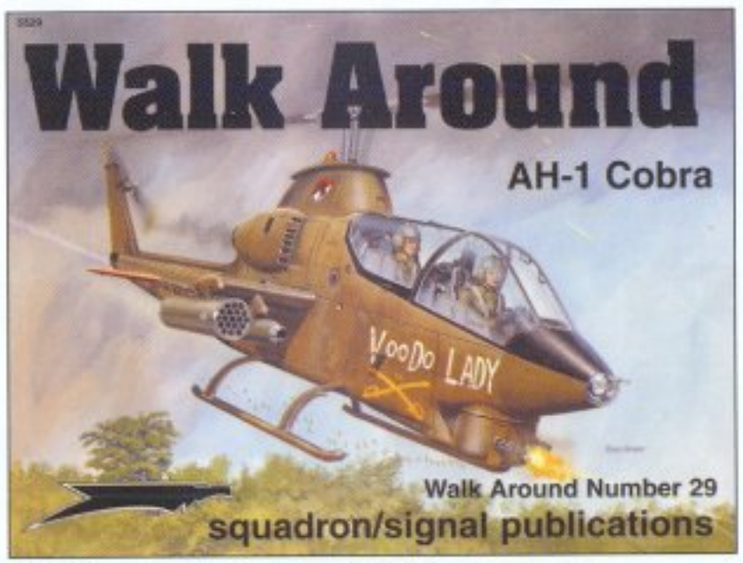
5506 B-52 Stratofortress Walk Around



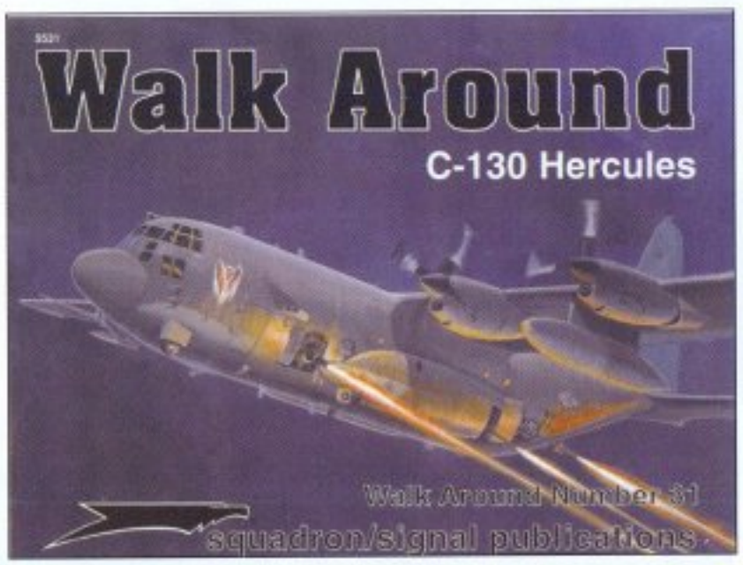
5523 F-105 Thunderchief Walk Around



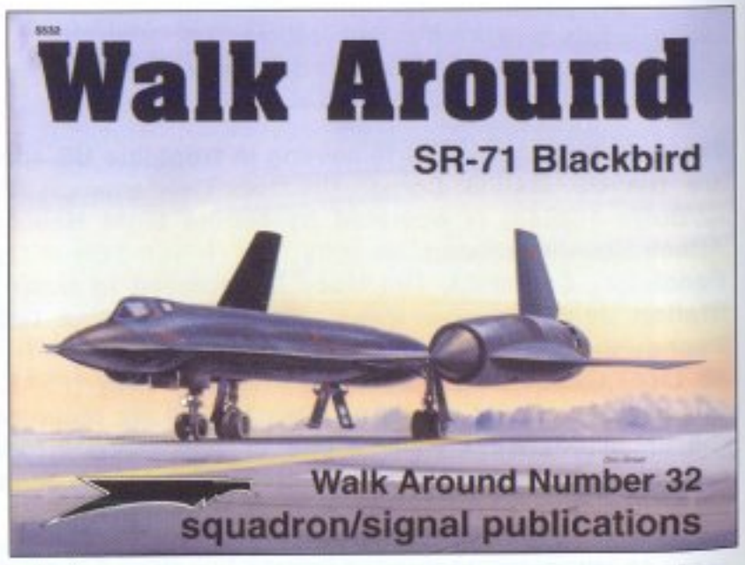
5527 A-1 Skyraider Walk Around



5529 AH-1 Cobra Walk Around



5531 C-130 Hercules Walk Around



5532 SR-71 Blackbird Walk Around

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